Health Psychology Principles in Behaviour Change Interventions – Insights from Practice and Research

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September 2012

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Preface

Preface

This thesis illustrates my training in a clinical applied health setting (National Health Service, London) as well as in a research setting (Copenhagen). During my training period, health psychology principles and theoretical foundations have been applied for demonstrating the skills and competencies required to be awarded the Doctorate in Health Psychology. Even though a number of case studies may overlap, there are distinctly different skills and knowledge gained through each independently.

The research component of the thesis (Section B) was completed during my position at Steno Health Promotion Center. The research competency of the thesis takes departure from an identified need to account for the contextual environment and cultural background as well as the individual factors that influence diet and physical activity behaviour for Danish and Migrant bus drivers - in a workplace setting. The research thesis encompasses four chapters. Chapter 1 provides background to the topic at interest; Chapter 2 covers the methodology and an account of how the analysis was carried out. Chapter 3 presents the results of the analysis. The discussion of the results, implications of the study as well as future recommendations for research and practice are presented in Chapter 4.

The key focus of my professional practices, which forms the basis of this thesis, was carried out in a stop smoking service (as part of the public health department) in a London Primary Care Trust. Smoking contributes to a wide range of diseases such as cancers, respiratory diseases, coronary heart diseases etc. (US Department of Health &

Human Services, 2004). Smoking poses increased risk for miscarriage, reduced birth weight and cot death (British Medical Association, 2004).

Due to smoking being the biggest preventable cause of death in the United Kingdom which leads to 80,000 premature deaths each year (Department of Health, 2011a), a particular focus on the importance of smoking cessation in these groups has been highlighted in key national documents and scientific evidence (Department of Health 2011b; NICE 2008; Raw, McNeill & West, 1998). Moreover, smoking is complex health risk behaviour as it constitutes a combination of different biological psychological and social processes (Marks, Murray, Evans & Willig, 2000).
In order to contribute to reducing the outcomes of smoking and minimise health inequalities, the provision of evidence based high quality stop smoking services is a key priority and focus for the government. Evidence based smoking cessation services are highly effective in both cost and clinical terms (Department of Health 2011a). The skills and knowledge gained through this work constitutes the professional competency component of the thesis (Section C).

The professional competence component of the thesis consists of three core (generic professional, teaching and training & consultancy) and two optional (implement interventions to change health-related behaviour & direct the implementation of interventions) competencies.

Firstly, there is the generic professional competency. This entails diverse dimensions of how professional conduct was maintained throughout the years of practice and research.

This involved working in line with the British Psychological Society Code of Ethics and Conduct (2006), the Health Professional Council's Standard of Proficiency (2010), the Danish Psychological Association's ethical principles for Nordic Psychologists (2010) as well as various National Health Service & Steno Diabetes Center policies and guidelines. The professional code of conduct was applied in various roles enhancing different dimensions of professionalism. Examples include seeing clients in the stop smoking clinics, providing teaching and training to healthcare professionals and students, as well as my role in providing consultancy and directing health trainers in their roles. In addition to practice and research, health psychologists (in training) are required to maintain continuous professional development to enhance their skills and knowledge, as well as share their work to a wider professional and academic audience. The case study highlights my experiences in disseminating work through conferences and seminars as well as the progress of my professional development through supervision.

The next competence in the professional practice consists of two case studies demonstrating teaching and training to two different audiences. These consisted of students and health care professionals. During my years of practice, I had the opportunity to provide stop smoking training (at different levels) to mid-wives, midwifery care students and other health care staff in the NHS. The training was developed based on health psychology theoretical foundations with a particular focus on training staff on principles of cognitive behavioural therapy (Beck, 1995), motivational interviewing (Rollnick & Miller, 1995), processes of change (Prochaska & DiClimente 1982; DiClimente & Prochaska, 1998), goal setting (Carver & Schneider, 1998) and

action planning (Sniehotta, Scholz, Schwarzer, 2005) in addition to general support skills. The second cases study reflects on the teaching sessions (as part of their course) delivered to students whose first language was not English. The focus of the session was on harmful effects of smoking in pregnancy. Both the training and teaching required me to tailor sessions in line with their knowledge and skills, providing me with an opportunity to design, develop and deliver teaching and training to a diverse audience.

Next, the professional competence of practice consists of consultancy. For this competency, I carried out a project where the overall aim was to reduce infant mortality in a London borough with a core focus on smoking. Smoking in pregnancy contributes to infant mortality (Shah et al 2006; Gray et al 2009). The consultancy was also related to smoking cessation in pregnancy. The aim of the consultancy was to design, develop, implement and evaluate a tailored specialist service for pregnant women who wished to stop smoking. The framework adopted for this consultancy was based on principles of process consultation approach (Schein, 1999). Reflections as well as the process from planning to evaluation are demonstrated in the case study.

Implementing interventions to change health- related behaviour is an optional component of the professional practice. During my professional practice in the National Health Service in London, I worked closely with implementing theoretical based interventions to change smoking behaviour. Majority of the clients I supported through smoking cessation were inpatients, pregnant women and their partners who wished to stop smoking. Interventions were delivered based on skills learnt through various trainings and workshops. This was also an opportunity to apply the knowledge gained

through my journey in specialising in health psychology. Through this period I had the opportunity to integrate health psychology foundations into practice and apply my skills to developing, implementing and evaluating tailored behaviour change interventions.

The last competency of the professional practice constitutes of directing the implementation of interventions. This area of work consisted of overseeing bilingual health trainers in implementing health related behaviour change interventions in a community drop-in clinic.

Directing the implementation of interventions constituted of a number of tasks. These ranged from identifying and assessing the skills and competencies of the people who were required to conduct the interventions to supervising and guiding them through training and implementation. The focus of the work was to develop targeted, culturally-sensitive interventions for eastern European pregnant women who wish to change health -related behaviour. Bi-lingual health trainers were employed to implement these interventions to reduce barriers such as unfamiliarity of the health services, and language etc. The approach adopted in this area of work was comprehensive in regards to behaviour change; smoking cessation, improved diet, increasing physical activity and screening behaviour. A participatory approach was employed with respect to developing interventions to provide an opportunity for health trainers to enhance their competencies. The process of directing bi-lingual health trainers is highlighted in the case study.

The last component consisted of carrying out a systematic review on ‘multiple behaviour change interventions in workplace health promotion’ (Section D). The systematic review was carried out as an independent part of a larger, collaborative review. The aim of the systematic review addressed whether or not workplace health promotion interventions supported multiple behaviour change. Furthermore, the review addressed if workplace health promotion interventions (over 30 years) have implemented multiple components as part of their health-related initiatives to support sustainable behaviour change. The systematic review outlines the rationale with description of the processes of how the review was carried out. Results as well as discussion highlight the findings.

The use of health psychology principles, skills and theoretical foundations has been illustrated in the respective case studies.

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Acknowledgements

Without the support and guidance from certain people, who contributed and extended their valuable assistance, this thesis would not have been possible. To begin with I would like to express my sincere gratitude to my principal supervisor Dr Clare Eldred - for her patience, insight, support, advice and inspiration. Thanks to Dr Esther Murray for supervising me during the initial period. I would also like to thank my secondary supervisors Dr Catherine Sykes & Dr Jacqui Farrants for their guidance and support through the process.

My deepest thanks go to Kjeld Poulsen – Head of Disease Prevention Research & Professor Bjarne Bruun Jensen -Vice President of Steno Health Promotion Center. For providing me with the opportunity for carrying out the research study in the Disease Prevention Team and for supporting me through so many aspects through my research project. Thank you for your kind concern and consideration for my academic requirements and for the resources provided, which enabled me to carry out my research study. I have learnt a lot from you, and feel privileged to have had the opportunity to be a part of a diverse and inspiring environment at Steno.

I would also like to express my sincere appreciation to Senior Researcher Bryan Cleal – for his insights, feedback, and for sharing his in-depth knowledge & support through my research study.

I would like to thank Rikke Nygaard, my fellow doctoral student for her assistance during the data collection process, as well as her positive attitude and for always being so kind and supportive. My sincere thanks to Associate Professor Rikke Magnussen & Senior Researcher Paul Bloch, for their unselfish and highly valuable moral support, advice and guidance throughout. You helped me to stay grounded in challenging times. Thank you so much!

A special thanks to Assistant Professor Maria Karen Kristiansen for her inspiring insights, and for sharing her valuable knowledge on migrants' health.

A special thanks to the Stop Smoking Programme Manager Liz Hughes and Assistant Director of Public Health Tim Baker for their support and guidance in various aspects through my training in the NHS.
Furthermore, I would also like to thank Ane Refslund Poulsen, Yvonne Naim and Tina Fogh at Steno - for their generous practical support & for always responding very positively to my ad-hoc requests for help. Riba – thank you for your steadfast encouragement and support – despite the distance.
I would also like to thank the rest of my colleagues in the NHS, Steno Health Promotion Center and City University - for their kind contribution.
A special thanks to all the participants who took time out, to share their experiences. This thesis would not have been possible without you.
A very big thank you to my dear friends for their never ending emotional and practical support. Thank you for the motivating energy that you shared and for always being there.
Last but by no means least; I would like to thank my family, particularly my parents – Ch. Zafarullah Khan & Shamim Bushra. Thank you for having faith in my abilities, for your patience during my most difficult periods and your unfailing support in every way possible.

SECTION B

Research Competence

Unit 2

Impact of individual, contextual and cultural influences on diet and physical activity behaviours – perspective from a workplace setting

Abstract

The overall objective of the study was to identify factors which play a key role in diet and exercise behaviour for migrant and Danish bus drivers in a workplace setting. The aim was to develop a framework to illustrate how the individual, contextual and cultural influences on health behaviour (diet and physical activity) interplay in an everyday perspective.

Data was collected using a qualitative approach. Methods applied consisted of contextual based observations and semi structured interviews with sixteen (*n=16*) bus drivers. Four interviews were conducted with Danish, four with Somali, four with Turkish and four with participants with a Pakistani ethnic origin.

The data was analysed using grounded theory. The core category which emerged from the data was 'impact of individual, contextual and cultural influences on health behaviours'. The core category was supported by five higher order categories. These were as follows: (1) Meanings of health (2) health behaviour and the potential to change, (3) Maintaining Balance (4) Workplace influences on health (5) Positioning in the social context. Each of the higher order categories was further supported with categories and sub-categories.

The analysis illustrated findings on different levels. As a result of the impact of individual, contextual and cultural findings, strive for balance through a process of equilibrium was core to well-being and health in an everyday perspective. A collection of factors from the different levels of influence played a key role on diet and physical activity in an everyday work-day context. These have been illustrated through the use of quotes and frameworks. Based on the findings of the study, future research and practice recommendations are outlined.

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Chapter 1

Introduction

1.1 Background - Setting the context

Denmark is a small nation in Scandinavia which, historically speaking, has had a relatively stable ethnic and cultural composition. Modern Denmark is a highly developed welfare state based on high levels of public provisions such as healthcare, education, unemployment benefits, old-age pensions and early retirement, which are accessible to all citizens. The Danish system is built on ideas of social egalitarianism supported by an underlying structure in which the people of Denmark earn their entitlements by contributing through taxation throughout their working life for the growth and maintenance of wealth.

Migration from different parts of the world to Denmark has, in recent years, resulted in a much more diverse Danish population. In the face of this growing ethnic and cultural diversity, the two core concepts of homogeneity and equality, precisely because they oppose diversity, can be seen as obstacles to integration. There has, moreover, been sustained political focus on the financial burden migrants place on the Danish welfare system. As a result there has been a tendency for negative stereotypes of immigrants to emerge in national debates about social and economic migration, and this is especially so in relation to migrants from non-western countries.

Due to this, it can be argued that many immigrants are not ‘well-positioned’ in the new country in terms of being ‘active’ participants of the country. Many fail to become

active in the labour market (Statistics Denmark, 2012), and from those who are active, go on early retirement (Statistics Denmark, 2011b) compared to Danes. Many have reported that the state regulated integration programmes have not been conducive to providing immigrants with jobs that match their skill set. Furthermore, both private and public employers are reluctant to use other alternative social and educational resources which immigrants bring with them. There are some political initiatives which have pivoted around attempts to solve some of these challenges.

At one level the concept of homogeneity would appear to support the social and economic position of migrants in Denmark, since the official position is that ethnic minorities should be treated on the same basis as all Danish citizens. On the other hand, the principle of homogeneity fails to recognise the essentially marginalised status of many migrants and Denmark, in contrast to other countries which have experienced similar patterns of migration, has very little legislation addressing this issue as it relates to labour market participation. There are no multicultural policies which can provide certain advantages for ethnic minorities e.g. positive discrimination is one example. Likewise, there are no formalised rules and guidelines for how institutions can adapt to a culturally diverse workforce. In light of the demographic drift away from a homogenous population, there is a need to look closer at how the upcoming potential health burdens can be reduced or prevented.

Having provided an overview of the context, the current study aims to address several layers of influences on health behaviour. This is done to get a comprehensive understanding of the influences on diet and physical activity behaviour. This results in

presentation of health related literature from a number of aspects (migration, ethnicity, health behaviour, work environment) with an attempt to inform an understanding of the different aspects of influences on the individual and to bridge between these influences for a comprehensive understanding of influences on health behaviour in a workplace context, amongst bus drivers, with different ethnic backgrounds.

The following section will address how health inequalities exist, partly as a result of migration and employment. Firstly addressing the process of migration and the effects of health as a result of this will be presented. The occupation type that migrants work in and its effects on health will then be addressed. An all-round overview of the different risk factors that bus drivers are exposed to will be presented. In addition to this, the context is also addressed, where the role of the workplace and other contextual factors which influence behaviour is discussed. Behaviour and change models are also addressed in the final section.

Taking it as read that a core motivation for all people is to live an 'illness free' life, the main purpose of this study is to gain a deeper understanding of health beliefs and behaviours in a workplace context with a high ethnic diversity.

1.2 Health Inequalities in relation to migration and work

Reducing health and social inequality has been prioritised at the government health strategic plans. Social inequality is usually explained by level of education, socio-economic status and income.

While Denmark is indisputably one of the countries in the world with the highest levels of social and economic equality, there remains, nonetheless, a relatively large gap

within health equality (WHO, 2005). A vast amount of literature has highlighted that health has a social gradient (Marmot, 2005; Marmot et al, 1997; Wilkinson & Marmot 2003). In other words people with a low socio-economic status have more health problems than people with a high socio-economic status (Davey-Smith, Blane & Bartley, 1994; Syed et al, 2006; Wilkinson & Marmot 2003). This also indicates that people, who have a higher socio-economic status have an increased quality of life, live longer and are generally healthier compared to those with a low socio-economic status who die comparatively earlier, and suffer poorer health (Dalstra et al, 2005; Demakakos, Nazroo, Breeze & Marmot, 2007; Siegrist & Marmot, 2004). Immigrants often work in occupations which are regarded as having a low socio-economic status, poor work environment, occupational hazards and vulnerability to stress (Ahonen et al, 2007; Singla, 2008). On average, migrants in Denmark have lower socio-economic status and are at a higher risk of experiencing unemployment, poorer health and exclusion compared to Danes (Nusche, Wurzberg & Naughton, 2010; Harpelund, Nielsen & Krasnik, 2012). Moreover, Gamperiene et al. (2006) highlights that migrant workers experience more mental health problems

1.2.1 The process of migration and its effects on health

Migration is a process of social, cultural and environmental changes. During the period of migration a person moves from one cultural setting to another with the purpose of settling down for a set period of time or on a permanent basis. Migration covers a wide variety of processes such as migrating between countries or within countries i.e. between regions (Syed & Vangen, 2003). Migrating between countries which do not share any similar characteristics i.e. language, culture, structure etc. can pose challenges for the migrant, as well as the host country.

Immigrants are usually referred to as people who have sought refuge from non-western countries. Today, the total population of immigrants (and descendants) from non-western countries (Asian and African) comprises a total of 10% of the Danish population (Statistics, Denmark, 2010). In 1980, this was just 1%. In other terms, immigrants are also referred to as ethnic minorities in the new country of stay. Due to the migration from non-western countries, migrants constitute a very diverse group with different cultural and socio-economic backgrounds.

Ethnic minorities or migrants are defined as a "comparatively smaller group within a community which differs ethnically i.e. regarding language, diet, religion and belonging to another country and not the one residing in, being perceived by self and others as being different from the majority of the population on these aspects" (Bhopal, 2007).

It is not the aim to discuss the concept of ethnicity in this thesis, but to simply use the definition which is provided by Bhopal to gain an insight into the understandings of health as an ethnic minority or migrant from a non-western country. Migrants and ethnic minorities will be used interchangeably. Migrants or ethnic minorities share origins or social background, culture and traditions which are distinctive. These are maintained between generations and lead to a sense of identity and group-ness, as well as sharing a common language or religious tradition (Bhopal, 2007). These are often well engraved in migrants, even when they migrate from their country of origin. Since the 1980's, Denmark has seen a marked rise in the number and diversity of minorities from different non-western ethnic backgrounds. In the late 1960's and 1970's

Denmark opened its door to migrants through the 'migrant worker programme' receiving immigrants from more than 200 different countries. During this period Danish companies 'imported' most of its foreign workforce from non-western immigrants, constituting 3.3% of the Danish population by 2007 (Singhammer & Bancilla, 2009). The migrant worker programme was implemented as a result of lack of labour workforce in Denmark. Aside from this, the pattern of migration to Denmark has largely been driven by global conflicts and since the Second World War Denmark has received refugees from the Middle East, Asia, and, more recently, from the former Yugoslavia, Iraq, Afghanistan and Somalia. In 2008, there were approximately 378,665 immigrants and 119,297 offspring's, equal to just below 9.1% of the entire population in Denmark, where the largest group belonged to the Turkish origin.

Despite the successful aspects which come along with migration, most societies have negative views on immigration and immigrants (Bhopal, 2007). As a result of increasing diverse population and thereby a diverse workforce-there are, amongst other things, all manner of 'foreign' cultural norms and traditions and a concomitant heterogeneity amongst the population.

Europe often attracts migration for reasons such as employment and business, higher education purposes, political refuge etc. Having said that, Denmark, amongst other EU countries, is facing the challenge of an aging workforce, which poses significant concerns of the sustainability of Danish welfare (Danish Government, 2010). It is evident that in order to maintain the Danish welfare model there is a need to identify potential solutions to this problem. One of the solutions proposed is to recruit workforce

from abroad (Danish Government, 2010), though if this solution is to be viable there is a need to be sensitive to biological, cultural and social needs of a multi-ethnic society. In order to achieve this objective it is, however, necessary to invest more consideration and resources in relation to the position of migrant workers in Denmark. This is necessary both in order to make Denmark a more attractive place to work for migrant workers and, as importantly, to ensure that those that do work in Denmark are able to work healthily and productively.

Even though migration can enhance societies, it can also bring along challenges – public health challenges being one of them. This may be a result of differences in people's culture and lifestyle and health behaviours. There is also a vast difference in their social, educational and economic status and the difference of environment before and after migration (Bhopal, 2012) contributing to increase in health inequalities.
In terms of health, Denmark's increasingly multi-ethnic composition poses a huge challenge to the welfare model in general and to the healthcare system in particular. Migrants typically have different disease patterns, and often have psycho-social problems which are significantly different than those of the indigenous population (Kristiansen & Mygind, 2010). There are a significantly (two-third) higher proportion of all ethnic minority groups which have reported three or more long term illnesses as compared to ethnic Danes.

Research has further documented apparent tendencies for different types of chronic illness being more prevalent in some ethnic groups when compared to ethnic Danes (Folmann & Jørgensen, 2006; Ujcic-Voortman et al., 2009). Singhammer (2008),

Singhammer & Bancilla (2011) & Hansen & Kjøller (2006) found that there is a 6-8.5% higher incidence of diabetes in all ethnic minority groups – apart from Iranians - and this incidence is higher in ethnic groups who are from non-western countries.

Other studies confirm a higher tendency of diabetes (type 1 and 2) amongst immigrants from Pakistan, Somalia, and Turkey, compared to Danes (Dyhr and Vibe-Petersen, 2007; Danish Health and Medicines Authority, 2005, 2008; Ingerslev 2000; Vibe-Petersen and Perrild 2000; Ujcic-Voortman et al., 2009), as well as premature mortality compared to Danes (Sundquist and Johansson, 1997).

Over the years, there has been a continuous interest in understanding the differences in health amongst migrants, as migrants generally reflect having a lower socio-economic status and as their health understandings can differ due to several psychological and social factors. There are studies which have highlighted associations between chronic conditions and poor health amongst migrants (Senior & Bhopal, 1994; Ujcic-Voortman et al., 2009; Andersen et al, 2011). Other factors contributing to increase in health inequalities as a result of migration include language barriers, lack of knowledge about health services, exposure to a new social context, the loss of social status, and the experience of discrimination and even marginalisation (Packness, 1998; National Institute of Public Health, 2009). Health is therefore often affected due to the significant difference in many respects (Kristiansen, Mygind & Krasnik, 2007; Syed & Vangen, 2003; Carta et al., 2005).

Even though Denmark is continuously becoming a multi-ethnic nation, and despite the challenges outlined as a result of migration, differences in health patterns and 'way of life' as well as the apparent influences of cultural background, there is very limited research based knowledge about health amongst migrants in Denmark (Singhammer, 2008; Folman & Jørgensen, 2006; Ingerslev, 2000). This may be a result of the majority of research carried out lacks subjectivity, and accounts for understanding of self-rated health (amongst migrants) and disparities through objective socio-economic factors (Wiking, Johannson & Sundquist, 2004; Borrell, Crawford & Dallo, 2007).

It may be that individuals perceived successes and its impact on health may not be fully reflected using such measures. Research has criticised the use of such objective measures to measure socio-economic status amongst ethnic minorities/migrants as it doesn't account for self-perception in relation to the social hierarchy (Adler et al, 2000). Understanding disparities alone from objective measures do not provide the full picture as it disregards (a) individuals subjective assessment of their health (b) the multi-dimensional aspect of health which is influenced through social, economic, and cultural factors. The subjective nature of health and social status allow subjective measures (Singh-Manoux, Adler & Marmot, 2003) to provide us with a closer understanding of health (Singh-Manoux, Adler & Marmot, 2002; Singh-Manoux, Marmot & Adler, 2005). Furthermore subjective measures e.g. self-perceived health functionality are strongly associated with health and are strong predictors of mortality (DeSalvo et al, 2006; Idler and Benyamini 1997).

Furthermore, it is also free from psychological bias (Hu et al, 2005). It accounts for perceived satisfaction in relation to financial resources, social trust, beliefs in relation to the future and acculturation (Franzini, Fernandez-Esquer., 2006).

Therefore, rating ones health as good or poor is highly dependent on individuals understanding of good and poor health. When asked to rate 'one's health', it is likely that migrants associate health to aspects beyond factual diagnosis such as diabetes. Understanding of health is often influenced through culture, upbringing, experiences and general way of life. Self-reporting can therefore mask the diversities i.e. difference in culture and social norms of 'way of life' present. Even though it is known that there are diversities present, there is limited literature which provides insight into how and why 'health' in understood in the way it is rated. This indicates that health need to be understood within a context (Michie, Stralen & West, 2011), even though health beliefs play an important role in how we perceive 'illness free' or 'good health'.

Through understanding health within a context, there is a likelihood that we can understand the subjectivity of health, accounting for the factors within a context may assist in evaluating how migrants make sense of their health, why and how health matters in an everyday context.

An improved understanding of the contextual factors may help us to develop appropriate strategies to reduce health disparities and improve health related behaviour of this group. Having outlined the process and effects of migration on health, the following sub-sections will address the link between occupation types amongst migrants and focus further on the bus driver's health.

1.2.2 Occupation type amongst migrants and its effects on health

Ethnic minorities are, when compared with ethnic Danes, usually overrepresented in less attractive and poorly paid jobs, and a large number are also independent/self-employed (Statistics Denmark, 2011a). One of the industries where a large number of migrants are employed is the transport sector constituting of 13.1% compared to 7% Danes in this sector (Statistics Denmark, 2011a).

Many of the first generation of minority groups obtain work in the area of unskilled labour, not least because these jobs are, relatively speaking, easy to acquire. Although there is not always a match between the qualifications of individual immigrants and the work they obtain, it is also the case that many have moved to Denmark with the sole aim of establishing a better future for themselves and their families. As a result of this, their main motive when undertaking unskilled labour can be considered to be primarily financial, though there is little doubt that the mismatch between skills and tasks experienced by some is the source of much disaffection.

The reasons for early retirement are diverse, and it is as yet unclear why this is the case, but given the fact that all employees in unskilled labour are more likely to go on early retirement (Statistics Denmark, 2011b), it is evident that there is a potentially unhealthy correlation between migrant workers and unskilled labour which may accentuate the level of risk for early retirement. The risks associated with being a bus driver, which may, contribute to early retirement is addressed next.

1.2.3 Health risks as a bus driver

There are several dimensions towards health risks which entail in driving a bus. These are a combination of structural, environmental context and behavioural factors. These factors have been studied in some key studies. For example approximately sixty years ago, Morris and his colleagues identified that bus drivers were at an increased risk of cardiovascular diseases compared to bus conductors (Morris et al, 1953a, 1953b) as a result of lack of bus driver's physical movement. Other studies and reviews have also highlighted the increased risk of cardiovascular disease in bus drivers following Morris's study (Wang & Lin, 2001; Kompier & Di Martino, 1995; Evans, 1994).

Following this, there have been a number of studies outlining the health risks of being a bus driver in the inner city, where research has not only confirmed the presence of risk for developing cardiovascular disease (Rosengren, Andersen & Wilhelmsen,1991; Netterstrøm & Suadicani, 1993; Gustavsson et al., 1996, Gadd et al., 2006) but has also found increased cardiac mortality and hospitalisation rates (Netterstrøm & Juel, 1988; Michaels & Zoloth, 1991; Alfredsson, Hammer & Hogstedt, 1993; Tuchsen & Endahl, 1999; Tse, Flin & Mearns, 2007; Wang and Lin, 2001; Chung & Wong, 2011). In addition, bus drivers have higher incidences of lung diseases, including lung cancer as well as hypertension, prolapsed vertebral disks, dyspepsia, other stomach problems and muscle and back pain (Netterstrøm, 1988; Rafnsson & Gunnarsdottir, 1991; Jensen, Tuchsen, Oerhede 1996; Magnusson et al, 1996; Krause et al., 1998b; Ragland et al, 1998a; Soll Johanning et al., 1998; Tuchsen & Hannerz, 2000; Kompier and Dimartino, 1995; Tse, Flin & Mearns, 2006).

Netterstøm & Laursen's (1981) study on bus drivers in Copenhagen and their increased risk for coronary heart disease was consistent with the Gothenburg bus drivers which compared data across bus drivers and other occupations. Consistent with the evidence, the results indicated that bus driving is a high risk occupation compared to other occupations. Research from epidemiology and other scientific fields have consistently drawn confirmations that bus driving is a high risk and stressful job (Evans, Johansson & Rydstedt, 1999; Wang & Lin, 2001; Taylor & Dorn, 2005; 2006; Nasri & Moazenzadeh, 2010). This is, most likely to be a result of the environmental context (including ergonomics) and individual behavioural factors. As a result of this, there is a need for research to explore how the workplace can be established as a catalyst for improving health. Changes could be implemented in the environment which are simple to implement and are effective, as well as providing opportunities to bus drivers to change their behaviour to improve health. One of the potential outcomes of this would be higher job satisfaction, healthier employees and, by implication at least, a reduction in sickness absence and early retirement.

1.2.4 Structures and the environmental context – negatively influencing well-being

Structural and the environmental context are relatively interlinked will be reviewed here.

One of the key features of the bus driver's job is the time spent driving the bus where they experience poor ergonomics and whole body vibrations (Evans & Gunn, 1998; Lyons, 2002). As a result of long hours behind the wheel, with limited space for movement as well as a static posture contributes to further physiological strain and limited (if none) opportunity to leave the constrained static position.

In addition to this, there are irregular and often limited varieties of opportunities for unwinding between their shifts or thereafter (Lal & Craig, 2001; Mathews & Desmond, 2002). Taking this into account, bus drivers spend a lot of time at the workplace setting due to the split shift phenomenon, where a combination of early morning and evening shifts with breaks in between are a common aspect of this job. Irregular shifts contribute to body clock changes, which can directly disrupt diet, enhance risk of sleep disorders contributing to poor health (Kompier & DiMartinio, 1995; Miller & Mackie, 1980; Moreno et al, 2006; Pandi-Perumal et al, 2006). Inflexible work schedules and long hours also contribute to inability to unwind in their free time (Johansson et al, 1998; Delaney et al, 2002).

1.2.5 Providing high quality customer focused service

Karasek et al. (1979; 1981) had outlined much earlier those jobs which entail extreme physical and psychological strain and where there are limited and inadequate resources to deal with the workload can lead to psychological and physical strain, increasing risk of disease.

Customer relations and a good customer satisfaction play a vital role when driving a bus. In relation to the working environment, since bus driving is an occupation where the aim is service provision to the general public, bus drivers are vulnerable and highly exposed to harassment and violence from passengers. Previous research shows that bus drivers are four times more likely to face harassment and violence than the common worker (Tse, Flin & Mearns, 2006). Harassment has a detrimental effect on overall health and well-being. Individuals exposed to harassment can suffer from social isolation, low self-esteem, chronic fatigue, depression, anger, anxiety and despair to name a few (Leymann, 1990, 1996; Zapf, Knorz & Kulla, 1996). The exposure to

mistreatment in addition to the above mentioned aspects of the work environment could make drivers highly vulnerable and the effects can affect the general well-being and hamper their ability to cope with un-met demands of the work environment (Tse, Flin & Mearns, 2006). It is also likely that these influences accumulate across other situations outside work and hamper their ability to cope.

In addition there is a high level of pressure to perform in an environment where there is a high level of responsibility for passenger safety, traffic congestion and minimal control over how this is carried out contributing to increase in job demand and thereby increased levels of job stress (Noblet & LaMontagne, 2006). These factors make bus drivers more vulnerable to poor health and disease (Evans & Carrere, 1991; Tse, Flin & Mearns, 2006). It is not clear how the relation between the psychological aspect and physical strain affects bus drivers and how the excess workload impacts the ability and capacity to cope. However, the literature does seem to suggest that in order to address factors such as job related stress as a result of high demand – low control and being vulnerable to poor treatment, workplaces need to address these issues from more than one perspective. Some focusing on individual characteristics, and the other focusing on the factors outside one's control causing stress (Cooper & Marshall, 1976; Michie, 2002; Michie & Williams, 2003).

1.3 Understanding diet and exercise behaviour in a bus drivers context

1.3.1 Role of the contextual environment

The risk factors associated to health as a bus driver have been highlighted earlier. The need to emphasize the benefit of healthy eating and physical activity in bus drivers has

been highlighted, yet how this should be addressed is unclear (Escoto & French, 2012). As a result of the diversity present in this industry, and the differences as a result of this it may even require a wider framework to understand the factors which are influencing behaviour. Particularly taking into account the migrant diversity present, and the differences outlined earlier. Prior to developing interventions, we need to acknowledge that behaviour is in the moment and is influenced by context. Once we have established an understanding of the behaviour, we can focus on changing it, as behaviours are different in different contexts. Interventions may likely to be effective if we understand the particular behaviour in its particular context.

There is continuous evidence which suggests that the workplace can have a significant influence on employees' health behaviours (Shain & Kramer, 2004; LaMontagne, Keegel & Vallance, 2007; Punnet et al, 2009; Lytle, 2009). For example, implementations of simple changes may encourage uptake of healthy diet (Gorgulho, Previdelli & Marchioni, 2012).

In addition to the continuous consensus that uptake of unhealthy food is an environmental (workplace) issue (French et al, 2010), evidence points towards the direction that individuals who eat away from home are not able to carry the responsibility of improving health behaviours i.e. uptake of healthy diet, and increase physical activity (Peters, 2003) – similar to bus drivers.

However, due to the shift work phenomenon and other factors highlighted previously, it is highly likely that it is difficult to adopt a healthy diet and engage in physical activity

as recommended result of the structural and contextual factors which appear to have a strong association with bus drivers. It is nonetheless unclear, how practical this is for the bus operators/organisations, where employees e.g. bus drivers are usually driving a bus, and often have limited time in between shifts. In addition, it is also unclear how provision of healthy diet and opportunity for physical activity will be utilised due to little control over their options in a workplace environment.

It therefore appears that it is unlikely that valuable changes are achieved without policies and changes in the environment to support behaviour change interventions (Lytle, 2009). It is unrealistic alone to expect individuals to change their health related behaviour when the environment does not provide available options, when research suggests that the role of the environment has been documented as holding key potential to allow individuals with the option of initiating adoption and maintenance of healthy behaviours, and thereby hold a strong influence in behaviour change (Peters, Wyatt, Donahoo et al, 2002; Michie et al, 2011).

Having said that, there is limited literature which addresses the ways, through which contextual environment affects individuals, and their health behaviours, particularly in a workplace setting. In addition, there is a need to explore the general wellbeing of bus drivers and their subjective experience in relation to health and well-being. The ways in which the structures of a bus driver occupation affect one psychological capacity in relation to their behaviour and change remains unclear. Physical activity and diet related behaviour change interventions may be effective, however without accounting for several key factors for that particularly behaviour e.g. irregular and remote work hours

or split shift would hamper the ability to participate in a physical activity intervention (French et al, 2010). This may a result of inaccurate development of the behaviour change interventions, and the likelihood of its sole focus on the environmental structure alone.

The relation between the above mentioned factors (job characteristics, environmental, contextual and individual factors) needs to be refined, clear and concise. This will support in designing and developing effective replicable behaviour change interventions. The interventions may benefit from accounting for the context and address factors such as the need to account the possibility that as a result of the diversity, the diet patterns may be different. Interventions should also account for the wider complexity of environmental influence on diet and physical activity behaviour. Workplaces provide an opportunity where these influences could be addressed effectively.

1.3.2 Job structure & characteristics

Sedentary behaviour is a common problem and a major risk factor for becoming obese, which is a prevalent problem in today's industrialised society. Even though overweight has, to a certain extent, a genetic component and may even result from metabolic abnormalities, the rapid increase in obesity during the last twenty-thirty years is associated with a number of behaviours (unhealthy diet and lack of physical activity) and environmental driven factors (Hill & Peter, 1998; Booth et al, 2001).

Lack of physical activity and high levels of consumption of certain nutrients such as dietary fat contribute to overweight and obesity. It is positively associated with intake of

soft drinks, high fat foods, (Heini & Weinsier, 1997; Baughman et al., 2003; Stubbs & Lee, 2004), and inversely associated with eating breakfast (Timlin & Pereira, 2007; Giovannini, Agostoni, Shamir, 2010; Giovannini et al., 2008) and increased fruit and vegetable consumption (Ledoux, Hingle, Baranowski, 2010; Heo et al., 2011).

Occupations where employees experience adverse work conditions may also be, partly, related to overweight and obesity. The risk of obesity may increase in jobs where there is high demand, low control and long working hours. These pressures and demands may have a negative impact on their dietary patterns and physical activity, which may lead to overweight and obesity (Yamada et al, 2001; DiLorenzo et al., 2003). The work environment therefore has a significant influence on diet and physical activity behaviour, particularly among bus drivers who are at a high risk for gaining excess weight (French et al, 2010). This may entail not only personal but economic costs at a national, as well as a global level.

Compared to other occupations, individuals in the transport sector i.e. bus drivers are at a higher risk in relation to becoming obese and taking up sedentary behaviour as well (Winkleby et al, 1988; Ragland et al, 1987 & 1998a). They are more likely to have low levels of physical activity, and high levels of fat intake compared to employees in other occupations (Hedberg, 1993). Jobs which have similar job structures and characteristics i.e. truck drivers carry a high prevalence of obesity amongst its employees (Moreno et al, 2006; French et al., 2007). It may therefore be beneficial to understand particular health behaviour in the different contexts, as they may be different as a result of external factors. This will be outlined in the following section.

1.4 Workplace as an ideal setting for behaviour change interventions

Work places are a unique setting to implement health related behaviour change interventions, as they can reach a large proportion of the population (Sorensen et al., 2003). The World Health Organisation's (2004) strategy on diet and physical activity and health as recommended by the Fifty-seventh World Health Assembly in resolution WHA57.17 outline the role of the workplace (point 62) as a key setting for implementation of health related initiatives.

"Workplaces are important settings for health promotion and disease prevention. People need to be given the opportunity to make healthy choices in the workplace in order to reduce their exposure to risk. Further, the cost to employers of morbidity attributed to non-communicable diseases is increasing rapidly. Workplaces should make possible healthy food choices and support and encourage physical activity".

Followed by this, the WHO's Global Plan of Action on Worker's Health 2008-2017, as endorsed by the Sixtieth World Health Assembly in resolution WHA60.26, states in Point 14:

"Health promotion and prevention of non-communicable diseases should be further stimulated in the workplace, in particular by advocating healthy diet and physical activity among workers, and promoting mental health at work…"

Improving the health of employees not only brings benefits for the individuals, but also holds benefit for the employers (such as economic benefits as a result of reduced absenteeism, disability) (French, 2005; Aldana, 2001; Goetzel, 2001). Implementing

behaviour change interventions at the workplace may promote improved health, happiness and wellbeing at work, leading to economic benefits (Quintiliani, Sattelmair & Sorensen, 2007).

There is evidence to suggest that migrant groups fail to participate and integrate and engage in the health related initiatives in local communities where they reside (Bollini & Siem, 1995; Netto et al., 2010). More so, there is consistent evidence suggesting lack of participation in health related initiatives by employees in unskilled labours i.e. bus drivers (Sorensen et al., 1996; Glasgow, McCaul & Fisher, 1993; Morris et al., 1966). Some of the identified barriers are shift work, long commute between work and home and personal responsibilities that lie outside the workplace (Alexy, 1990). This could be a result of lack of cultural sensitivity or unfamiliarity in many behaviour change interventions (Netto et al, 2010). In order to address this, workplaces with a diverse workforce are an ideal setting to explore the issues around lack of uptake of behaviour change interventions (Dana & Griffin, 1999; Quintiliani, Satelmair & Sorensen, 2007). In order for health related initiatives to work effectively, there is a need to ensure that the workplace acknowledges that their workforce is diverse and that it is prepared to address how they can effectively contribute to a positive impact on the workforce. The workplace also has the potential to act as an activator for creating a wider sense of well-being among its employees. Indeed, it is to be expected that promoting a wider sense of well-being among employees is a prerequisite for achieving a healthy workforce, as disaffected employees are likely to be less inclined to participate in workplace initiatives. This is a pertinent point with respect to ethnic minorities who often experience marginalisation and a sense of exclusion within the workplace

(Schneider, Hitlan & Radhakrishnan, 2000). However, effective behaviour change interventions require intervening at several levels, simultaneously, and consistently (NICE 2007; OECD, 2010). In order to have a consistent and structured framework to take the interventions (at several levels forward) and to develop and implement behaviour change interventions, it may be possible to draw on the 'opportunity' condition suggested by Michie and colleagues in their COM-B model, where they highlight that there needs to be 'opportunity' (along with capability and motivation) as one of the essential fundamental condition, before behaviour change can occur (Michie Stralen & West, 2011). It is also possible to draw on the other domains, such as the intervention functions and policy categories. Addressing this at a workplace setting may help promote a sense of inclusion, increased participation rates, improved wellbeing at work and thereby improved work. The ways through which these factors could be addressed is discussed further in the next section.

1.4.1 Theoretical based interventions

''. . .there is a remarkable distinction between the impressive number of studies that demonstrate adverse health effects of the bus drivers occupation and the small amount of documented prevention and intervention projects in bus companies'' (Kompier, Aust, van den Berg, & Siegrist, 2000, p. 12). Even though there is vast amount of literature on the health risks associated to being a bus driver which has been highlighted earlier, and the need to implement interventions through a systematic and replicable method (Kompier & DiMartino, 1995) , there is no distinct method or process by which this occurs (Tse, Flin & Mearns, 2006). Research studies have further indicated that there is insufficient evidence on theoretical based interventions addressing diet and physical activity in a workplace context (Plotnikoff et al, 2005). Furthermore, there is

insufficient evidence on diet and physical activity behaviour change interventions for ethnic minority populations (Liu, Davidson & Bhopal et al, 2012). In order to develop effective, replicable interventions which target the several layers of influence, as well as assist in designing and evaluating effective interventions, we need to know what is delivered, and not only how it is delivered. Even though organisations differ with respect to resource allocation toward health related initiatives, most workplace initiatives are quite complex in nature, but with a consistent and thorough model of behaviour change interventions and the possibility of evaluations, we may come to a point where we are not only better informed about what works and how it works but also in a better position to improve the interventions. Through a closer specification of 'what'' is delivered, we will be in a position to focus on the behaviour in individuals. Having gained a more clear and concise understanding of the psychological, as well as environmental and contextual influences on health, there is potential to develop and implement effective, systematic behaviour change interventions for the workplace to enhance employee well-being.

We may be able to make use of the behaviour change wheel (BCW) (Michie et al, 2011) as it addresses the links between several layers of influence that can have an effect on health behaviour. This is further addressed in the next section. Michie has identified three necessary conditions which are a requirement before change can occur. These are namely, capability, motivation and opportunity i.e. COM-B component of the BCW. Capability is defined as the psychological or physical ability to enact the behaviour. Another component is 'motivation' which has been defined as the reflective and automatic mechanisms that activate or inhibit behaviour. Another essential condition for

behaviour change to occur is the possibility of opportunity. Opportunity has been defined as the physical and social environment that enables the behaviour.

In addition to that, the policy categories mentioned earlier are also related to the factors which need to be addressed in a workplace behaviour change interventions - namely social and environmental factors.

1.5 Models of health behaviour and change

1.5.1 Constructs of health beliefs

Within health psychology, there are several relevant theories and models which attempt to conceptualise and define behaviour and change. A number of different models have been developed emphasising the importance of health beliefs in influencing health behaviours. We know that knowledge alone cannot predict or even change health behaviour

The models outlined below examine the predictors of health behaviour. They draw upon the concepts of cost-benefit analysis of any behaviour and also posit the individual as a rational decision maker and information processor. Bandura's social cognitive theory (SCT) (1977, 1986) is a foundation for these models suggesting that behaviour is governed by incentives, expectancies and social cognitions. Incentives suggest that behaviour is administered by its costs (smoking may be reinforced by self-perceived sense of reduced stress). Expectancies consist of situation outcome expectancies, outcome expectancies and self-efficacy expectancies. The 'social cognitions' are a central component of these models and reflect the 'individual's representations of their social world' (Bandura, 1986). Individuals are placed within the context. The extent to which this is achieved varies between the models.

Some of the key models such as the Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975)/ Theory of planned behaviour (TPB) (Ajzen 1985, 1991), Health belief model (HBM) (Hochbaum, 1958; Rosenstock 1966; Becker, 1974; Sharma and Romas, 2012), and Protection Motivation Theory (PMT) (Rogers, 1975, 1985) will be presented. Before proceeding to a further elaboration of these models, the key concepts in health beliefs will be outlined.

There have been several approaches to health beliefs e.g. attribution theory (health locus of control) (Rotter, 1954), motivation and self-determination theory as well as the concept of self-efficacy. One of the key psychological constructs identified in the literature is the effects of Locus of Control (LOC) (Rotter, 1954). Individuals differ as to whether they tend to regard events as controllable by themselves (an internal locus of control) or uncontrollable by themselves (external locus of control). Wallston and Wallston (1982) developed a measure for health locus of control to assess whether or not individuals regard their health as controllable by them (If I take care of myself, I can avoid illness.) or whether it is determined by external factors where they have no control i.e. consequences or outcomes of certain events are a result of fate and destiny (My good health is largely a matter of good fortune) (Rotter, 1954). Health locus of control has been shown to be related to dietary behaviour, where individuals with a higher internal locus of control individuals consume healthier foods than those with an external locus of control (Bennet et al, 1994). When analysing the relationship between individual's locus of control and healthy behaviour e.g. decisions to exercise, eat healthy, drink in moderation and avoid tobacco, it is found that individuals with an

internal locus of control are more likely to eat well and exercise regularly (Cobb-Clark, Kassenboehmer & Schurer, 2012). Although the link between bus driver's health and locus of control is interesting as well as relevant, a recent review of current evidence indicates there has been little research into the effects of Locus of Control in relation to bus driver's health (Tse, Flin & Mearns, 2006).

Another key health belief is individual's perception of risk and their susceptibility to an illness. Perceptions of risk can be understood within the framework of unrealistic optimism. People continue to engage in unhealthy behaviours because of their 'unrealistic optimism' in relation to perception of risk (Weinstein 1980, 1982, 1983, 1987). Weinstein asked participants to examine a list of health problems and to state 'compared to other people of your age and sex, what are your chances of getting [the problem] – greater than, about the same, or less than theirs?' The results of the study showed that most participants believed that they were less likely to get the health problem. Weinstein called this phenomenon unrealistic optimism as he argued that not everyone can be less likely to contract an illness. Weinstein (1987) described four cognitive factors that contribute to unrealistic optimism: (1) lack of personal experience with the problem; (2) the belief that the problem is preventable by individual action; (3) the belief that if the problem has not yet appeared, it will not appear in the future; and (4) the belief that the problem is infrequent. Weinstein argued that individuals show selective focus, where individuals ignore their own risk-increasing behaviour and focus primarily on their risk reducing behaviour. However, an individual tends to ignore others risk-reducing behaviour and focus on risk-increasing behaviour. This is also

related to the biases of self-concept, such as the 'better –than-average' heuristic (where people believe they are better than others on several dimensions).

Risk perception is also understood in relation to risk compensation, where people believe that one set of health-risk behaviours can be compensated for by another. This may be due to individuals being exposed to competing desires and motivations. For example, people may engage in an unhealthy diet and want to be thin or continue to smoke because they exercise regularly. Rabia, Knauper & Miquelon (2006) have developed the compensatory health beliefs model and argue that such beliefs may explain why people don't always adhere to dietary or exercise programmes.

The notion of risk perception and the proposal that individuals can process risk information (e.g. smoking kills) in ways that allow them to continue their unhealthy/health risk behaviour is central to unrealistic optimism and risk compensation. Previous research has suggested that those most at risk are least persuaded by risk information such as 'smoking kills'. They can either ignore or not associate themselves with that information (Jacks & Cameron 2003). Claude Steele (1988) proposed the self-affirmation theory, asserting that the overall goal of individuals is to protect their sense of self-integrity and their perceived sense of themselves as being 'adaptively and morally adequate'. When the sense of self-integrity is threatened, people respond in a way to restore their self-worth. One way that this is accomplished is through defensive responses which directly reduce the threat to the self-integrity. Another way that this is accomplished is through the affirmations of other alternative sources of self-integrity. These can enable people to deal with threatening information whilst protecting their self-integrity. For example, if a smoker thinks that

they are sensible, when confronted with a message on health risks indicating that smoking is not sensible, their integrity is threatened and may resort to defensive biases by blocking or ignoring that information. However if given the chance to think about an area, where they are sensible then they are less likely to become defensive about the smoking message. A recent narrative review carried out by Harris, Peter & Epton (2009) on the impact of self-affirmation on health related cognition and health behaviour concluded that even though people can deny and block the risks associated with their behaviour, the defensive process may be reduced if they are encouraged to self-affirm. This will contribute to increasing their acceptance of unwelcome risk information. In addition to this, they also concluded that self-affirmation is particularly effective in those most at risk, with people even showing intentions to carry out less unhealthy behaviours in the future. This appears to be highly relevant to addressing health related issues for bus drivers. To my current knowledge, there is no research study which has addressed this.

The concept of motivation to carry out any behaviour is a core theoretical construct in a lot of health behaviour research and it is widely accepted that individuals need to be motivated to start a behaviour (start exercising) or changing a behaviour (stopping smoking). Even though the notion of motivation is present (either implicitly or explicitly) in many health behaviour models, it plays a central role in self-determination theory (SDT) (Deci & Ryan 1985, 2000). The SDT focuses on reasons or motives that regulate behaviour and distinguishes between two kinds of motivations. The autonomous motivations (intrinsic motivation) which are related to engaging in behaviours which fulfil the personally relevant goals which make us feel rewarded and

satisfied. Deci and Ryan (1985, 2000) suggest that autonomous motivations satisfy three basic needs: autonomy ('I can manage my own behaviour'), Competence ('I can master my environment') and relatedness ('I can develop close relations with others'). They argue that autonomous motivations tend to be associated with sense of health and well-being. The other motivation: controlled motivations (extrinsic motivations) are driven by external factors e.g. the need to please friends. Compared with intrinsic motivations, extrinsic motivations tend to make the individual feel less satisfied.

The theoretical construct of motivation has also been further developed (Strack & Deutsch, 2004; West, 2006). The theoretical construct of motivation has also been further developed by West (2006) in his Prime Theory of motivation, where he suggests that the human motivation system operates at five levels. West outlines the system in the acronym 'p.r.i.m.e', which stands for plans, responses, impulses, motives and evaluations. The Prime theory highlights that at every moment we act in pursuit of what we most want or need at that moment' (West,2006). West's theory may be able to support our understanding of motivation in a sophisticated way, in as much that it provides the sub-elements of the main 'motivation' construct.

The notion of self-efficacy was introduced by Bandura (1977) and further became an integrated part of his social learning theory. The theoretical construct of self-efficacy has been a key construct in explaining behaviour. Self-efficacy is 'the belief in one's capabilities to organise and execute the sources of actions required to manage prospective situations' (Bandura, 1986). It is closely related to feeling confident in one's ability to engage in any given behaviour. For example, eating more vegetables

would be predicted by 'I can eat more vegetables in the future'. Self-efficacy has been presented as a key mediating variable in relation to health related behaviour change. However, it is unclear the factors which pose a negative effect on perceived self – efficacy in this role.

There are a number of key constructs which have been linked with health beliefs. Attribution theory and the health locus of control emphasise attributions for causality and control. Risk compensation, unrealistic optimism and self-affirmation focus on risk perceptions. Motivation and self-efficacy have been central in a number of health behaviour research. These different constructs of health beliefs have been integrated into models of behaviour and health beliefs, these will be presented next.

1.5.2 Models & Theories:

The TRA emphasises a central role for social cognitions in the form of subjective norms. Subjective norm is composed of the perception of the social pressures exerted on an individual resulting from their perceptions of what others think they should do and their inclination to comply with these.

The attitude towards behaviour is composed of beliefs and evaluations of these beliefs. However, it positions intention as the key predictor of behaviour. The TRA has been considered to be an important model as it places the individual in a social context. The TPB, an improved version of the TRA, also adopts a cognitive approach in explaining behaviour and represents the progression from TRA. It added a set of factors as affecting intention, behaviour and perceived behavioural control. These factors are subjective norm and a measure of behavioural control. Both the TRA and TPB emphasise intention as an important predictor. The theory proposes that intentions

should be conceptualised as 'plans of action in pursuit of behavioural goals' (Ajzen & Madden, 1986) and are due to a combination of three factors – namely attitude towards behaviour, subjective norm and perceived behavioural control. The perceived behavioural control is the perceived ease or difficulty with which an individual will be able to carry out the behaviour. This is very similar to the theoretical construct of self-efficacy (Bandura 1986, 1997; Terry et al., 1993). These three factors (attitude, subjective norm and perceived behavioural control) predict behavioural intentions, which further predicts behaviour. However, the TPB also states that perceived behavioural control can have a direct effect on behaviour without behavioural intention as the mediating factor. Previous research has outlined that the TPB is not considered to be effective in planning and designing the behaviour change interventions (Hardeman et al, 2002; Taylor et al. 2007; Webb, Sniehotta & Michie, 2010). However, using the theory to predict likely behaviour may, however, be a useful method for identifying particular influences on a behaviour which can be targeted for change.

The HBM is also a cognitive model which also suggests that behaviour is determined by a number of beliefs about threats to an individual's health and the effectiveness and outcomes of particular actions or behaviours. The HBM predicts that the likelihood that behaviour will occur is a result of a set of core beliefs. These are susceptibility to illness, severity of illness, costs involved in carrying out the behaviour, the benefits involved in carrying out the behaviour, cues to action. The individual's 'perceived control' to adopt the behaviour was also suggested to be added to the model alongside these beliefs about actions (Becker and Rosenstock, 1987). Perceived threat is at the core of the HBM as it is linked to a person's 'readiness' to take action. It consists of two

sets of beliefs about an individual's perceived susceptibility or vulnerability to a particular threat and the seriousness of the expected consequences that may result from it. The perceived benefits associated with behaviour. Lastly, the HBM identifies two types of 'cue to action'; internal, which includes symptoms of ill health, and external, which includes media campaigns or the receipt of other information. These cues affect the perception of threat and can trigger or maintain behaviour. Previous research provides support for certain components of the model. Perceived barriers have been identified as the greatest predictor (Norman & Fitter, 1989), whilst perceived susceptibility and perceived barriers have been identified as best predictors in other studies (Wyper, 1990). However, these predictors have been used for a range of different behaviours, indicating a need to address different behaviours independently. As a result of the identified need to include factors such as 'fear' and emotional components the Protection Motivation Theory (PMT) was developed (Rogers, 1975, 1985). The PMT describes health behaviours as a product of five core components; severity, susceptibility, response effectiveness, self-efficacy and fear. Behaviour intention is predicted by these components, which are then related to behaviour as an outcome. These components are also related to each other. Severity, susceptibility and fear are related to threat appraisal (appraising external threat). Response effectiveness and self-efficacy is related to coping appraisal (internal appraisal – appraising the individual). The PMT suggests two types of learning through sources of information. One being environmental, which consists of observational learning/ or verbal persuasion, whereas the other is intrapersonal which is learning or through prior experience. The five components of the model are influenced by this, which then elicit an adaptive (intention) or maladaptive (ignore/avoid/denial) coping response.

Rippetoe & Rogers (1987) suggested that the intention to exercise was directly predicted by susceptibility and self-efficacy. In another study, PMT was used to predict physical activity in adults with diabetes (Plotnikoff et al, 2010), and a large sample of healthy adults (Plotnikoff et al. 2009) reporting that self-efficacy and severity were good predictors of intention to change behaviour.

The models outlined above assess behavioural intentions to predict behaviour. The link between intentions and behaviour and the gap between intention and behaviour has been identified and research has attempted to minimise this gap through suggesting a number of variables which may bridge the gap between the intention and actual behaviour. Some of these variables are expanding norms (Godin & Kok, 1996), affective beliefs (Manstead and Parker, 1995), self-identity (Sparks & Shepherd, 1992).
In order to change behaviour effectively, wider frameworks have attempted to address influences at several levels which will be outlined next.

1.5.3 Wider Frameworks

Socio-ecological models of health emphasise the multiple level influence on health behaviour ranging from environmental to policy which influence behaviour. These models aim to enhance understanding of the different dynamic interrelations present between personal, environmental and policy factors. According to socio-ecological models, change in behaviour results from legislation, policy change. It is, in other words, very much a matter of affecting structural changes which subsequently impact on behaviour. This may be as a result of the growing evidence that health behaviours are determined by several factors (psychological, environmental, cultural etc.).

Over time, several frameworks have suggested implementing health related behaviour change interventions at several levels of influence where you understand and change behaviour contextually (McLeroy et al, 1988; Brofenbrenner, 1977; 1979; 1994; Stokols, 1992; 1996; Green & Kreuter, 2005; Dahlgren and Whitehead, 1991). Pratt et al (2007) suggests that these frameworks may be cost-effective and sustainable. Green and Kreuter (2005) suggest that health status and quality of life are influenced by a combination of several factors. These include our genetic predisposition, our behaviours, and a wide range of social and environmental factors. The latter includes factors such as culture, employment, education and the physical environment. Pratt et al. (2007) argue that workplace interventions to improve health must address organisational factors e.g. socio-cultural, economic; work environment (physical and structural) as well as job demands and structural. A variation to Brofenbrenners framework (1994) in relation to health promotion was proposed by McLeroy et al. (1988). According to this model, behaviour is influenced by five levels of influences, namely intrapersonal factors, interpersonal processes, institutional and community factors as well as public policy. It can therefore be argued that effective interventions should address all the potential determinants at the workplace. Dahlgren and Whitehead (1991) also use a social ecological approach to address determinants of health. In their social ecological model, they attempt to map the relations between the individual and the environment. They outline that individuals are at the centre with a genetic predisposition of disease – and the influences on their health surrounds them – which can also be modified. They describe the initial layer as personal behaviour and lifestyle poses risk of illness e.g. choice to smoke or not – where one is also affected by their personal relations and norms of their community. Followed by the first layer, the second

layer is social and community influences. These influences can be a positive support for each other in less favourable conditions. At the same time, it is just as likely that there is no support and that the social and community influence is negative. The final layer is the structural layer where influences such as housing, working conditions have an effect on one's health. The Dahlgren and Whitehead model opens the opportunity to assess the level and extent of each level to health. Furthermore, the model allows drawing hypotheses on determinants of health and exploring the relative influences of each layer, and the interaction between the layers of influences. Although these frameworks provide a comprehensive coverage with respect to influences particularly, interventions based on these frameworks are often complex in nature as they aim to address the several layers of influence as well as the interactions between these.

In 2005, the WHO launched the 'Commission on Social Determinants (CSDH)'. This was to draw attention of the political and civil society and other relevant organisations to the effects of social determinants on people's health. The aim was to address practical ways of tackling these issues. The CSDH states that ''The conditions in which people live and work can help to create or destroy their health - lack of income, inappropriate housing, unsafe workplaces, and lack of access to health systems are some of the social determinants".

The need to intervene at many levels – simultaneously and consistently has been outlined above. In order to develop effective interventions, there is a need for a model which not only has a comprehensive coverage, but coherency and clear links to theory. As mentioned above, we need to understand behaviour contextually. We therefore need

to address ‘why behaviours are as they are’ and ‘what needs to change for the desired behaviour to occur’. At the same time, there is need to acknowledge that there are too many theories explaining behaviour, yet most with relatively modest effects as a result of poor specification of the processes, hence we fail to gain a refined theory. With the vast amount of theories and their respective psychological constructs explaining behaviour, we can ask why the desired behaviours are not occurring. Part of the reason is that existing frameworks fail to have a consistent approach to implementing interventions (Michie, Stralen & West, 2011). There is a need to move away from traditional explanations and models of behaviour and change failing to consider the full range of factors that influence behaviour and integrate relevant theories to a simpler model, where the context is also accounted for. So, in order to increase effectiveness, and likelihood of sustainability, researchers have identified the need for a more comprehensive, yet simpler model (Cane, Connor & Michie, 2012; French et al, 2012). A model which envelopes the key constructs of previous models which can be used to predict and change most health behaviours.

Hence, there is a need for theory based interventions which are (1) well defined i.e. replicable – a thorough description of techniques used to bring about a change in behaviour rather than generic descriptions. There is a need to advance so we are in better position to describe the interventions in explicit details and generate links between the techniques used to change behaviour and the theoretical constructs which process this (Michie, Rothman & Sheeran, 2007).

Acknowledging that behaviour needs to be understood in its context, that there is a need for a comprehensive approach - one which considers the full range of options, as well as the need to account for both environmental and individual changes available, the behaviour change wheel (BCW) (Michie et al, 2011) aims to assist in addressing these. Michie and colleagues have simplified existing theoretical constructs to a simpler theoretical framework for behaviour change, namely the behaviour change wheel (BCW). They attempted to reach an expert consensus on which theoretical constructs should be included and applied. Michie and colleagues (2005) identified 33 theories, with over 128 theoretical constructs with regards to professional behaviour alone. Some of the psychological theories included in their recognition were motivation theories, action theories, and organisation theories.

This model is cumulative to existing models for several reasons. Its theoretical constructs have a solid foundation of its existence as it has appraised previous theoretical constructs and their integration to the simpler framework. The BCW (Michie et al, 2011) consists of three levels which illustrate a translational process from certain essential conditions, followed by intervention functions and finally the need for policy. The fundamental aspects consist of three conditions (COM-B), which are essential for behaviour change: opportunity (social and physical), motivation (automatic and reflective) and capability (physical and psychological). These theoretical constructs capture the key aspects of previous theoretical constructs in existing models. Through certain intervention functions (education, persuasion, incentivisation, coercion, training, enablement, modelling, environmental restructuring and restrictions), change can occur in the essential conditions i.e. opportunity, motivation and capability. Finally, there is a

need for change in policy (environmental/social planning, communication/marketing, service provision, regulation, fiscal measures and guidelines) to enable the interventions. Similar to other models which account for wider factors of influence on behaviour change, this model also implies a top-down approach. The policy would enable the implementation of interventions, which would in turn change the 'essential conditions' (COM-B) of behaviour which bring forward the changes in behaviour. However, this model has outlined very specific components and their content. It also assists in the psychological factors which bring about behaviour change. This model may therefore be in a good position to address the description of interventions strategies, as well as understand why interventions are effective or not. The authors suggest that it has a comprehensive coverage, and coherency. In addition to that, it can also be used to design more effective interventions as the components are thoroughly outlined, and can be useful for policy makers and intervention designers in various settings (Michie et al, 2011; Cane, O'Connor & Michie, 2012). The adoption of specific behaviour change techniques for a particular intervention can assist in developing and implementing replicable, clear and concise interventions (Abraham & Michie, 2008; Michie, Johnston & Franis et al, 2008; Michie, Abraham & Whittington et al., 2009; Michie & Johnston, 2012). Upon refinement, and further elaboration the COM-B components (capability, opportunity & motivation) has been developed to the Theoretical Domains Framework (TDF) (Cane et al, 2012; French et al,. 2012) to assist in implementation of interventions. This refined version consists of 14 domains and 84 component constructs (the number of component constructs in each domain is defined in brackets): 'Knowledge' (3), 'Skills' (7), 'Social/Professional Role and Identity' (9), 'Beliefs about Capabilities' (8), 'Optimism' (4), 'Beliefs about Consequences' (5),

‘Reinforcement’ (7), ‘Intentions’ (3), ‘Goals’ (6), ‘Memory, Attention and Decision Processes’ (5), ‘Environmental Context and Resources’ (6), ‘Social Influences’ (11), ‘Emotions’ (7), and ‘Behavioural Regulation’ (3). As a result of the elaboration, the domains from TDF have been mapped onto the COM-B.

The authors suggest that through the use of COM-B it may support in identifying the TDF domains which hold importance in changing behaviour (Michie et al, 2011;Cane et al, 2012). The TDF is relatively recent, but despite that has been used in studies in studies addressing barriers and levers related to hand hygiene (Dyson et al, 2010), its relevance to blood transfusion practice, including neo-natal and adult intensive care (Francis, Stockton , Eccles et al, 2009; Francis, Tinmouth & Stanworth, 2009). It has also been used to develop theory informed behaviour change interventions in a study carried out in Australia (McKenzie et al, 2008; McKenzie et al, 2010). In a study carried out in Finland, the TDF was used to understand behaviour in the implementation of tobacco use prevention and guidelines for counselling amongst dental professionals (Amemori et al, 2011). To my current knowledge, there are no published scientific articles based on the COM-B/BCW or TDF to assist behaviour change interventions design or implementation in the workplace with a high ethnic diversity.

1.5.4 Summary

The TRA, TPB, HBM and PMT models have attempted to understand and predict intentions, and the models proposed above have attempted to change a number of health related behaviours –including diet and physical activity behaviour (Baron & Kenny, 1986; Burke et al, 2008; Bauman et al, 2002). However, these models have been

criticised for being too narrow, and not accounting for the number of variables which have also shown to influence behaviour. There are a number of factors which influence how and why individuals behave, which cannot be explained through one single model. Similarly, studying factors of health beliefs to understand behaviour and changes may not be the same as those that actually change behaviour.

The HBM model also solely emphasises on the individual, and the role of the environment is not accounted for. Even though the PMT is an 'improved' version of the HBM, it also does not acknowledge habitual behaviours in addition to not accounting for the social and environmental factors. Even though the TRA/TPB addresses the social and environmental factors as well as past behaviour (habitual behaviours), there have been studies suggesting an overlap between some of the constructs (Norman & Conner, 1996). The model has also been criticised for its logical sequence and that the theoretical assumptions are simply flawed (Smedslund, 2000). Each model has been subject to criticism – one more than the other, there is one key issue which may be the result of unsuccessful predictions of behavioural intentions as well as behaviour (Sutton, 1998; Webb & Sheeran, 2010). This may be due the fact that these models do not acknowledge factors which are outside ones control. The theoretical models addressed above do not account for some of the domains (environmental, contextual etc.) which have been outlined to influence behaviour, which are apparent in the wider frameworks.

The wider frameworks presented above hold the advantage of establishing and outlining influential layers/domains which needs to be addressed and contribute to sustained

behaviour change (Sallis et al, 2008), the application of such models in developing behaviour change interventions presents some clear issues (Green and Kreuter, 2005; Elder, Saksvig, Young et al, 2006). Elder et al (2006) highlight that although such a framework provides a set of domains which need to be addressed; it does not specify guidelines or procedure specification on how the variables within each domain need to be applied. Another challenge is that the environmental and policy level influences would require being specifically tailored depending on which behaviour requires changing (Elder et al, 2006). For example, to increase physical activity at the workplace, a policy addressing appropriate opportunities for this to occur (time allocation, facilities) would need to be applied. As mentioned above, the method of application of the domains and the procedures to address the complexity entailed in each domain is not addressed through these frameworks.

Furthermore, they do not address or include the cognitive or motivational factors which influence behaviour. The determinants of individual's behaviour lie, according to these models, in the external environment – the social environment. Motivational variables and cues to prompt behaviour in the ecological model are essentially implicit, activated by having particular foods or exercise facilities accessible in a given environment. The cues to prompt change in behaviour therefore lie in the facilities and opportunities in an environment. Similarly, the authors of 'nudge' (Thaler & Sunstein, 2008) also suggest the idea of 'nudging' people to choose healthier options. Not only with respect to healthy eating and physical activity, but the authors suggest that other behaviours such as helmet use, teen pregnancy prevention, smoking cessation can be influenced by nudges.

Even though availability of and access to healthier food choices is positively associated with uptake of healthier food patterns, in the same way as access to and availability is positively associated with respect to physical activity (Booth et al, 2001; Popkin, Duffey & Gordon-Larsen, 2005). It is unclear how this is practical in different contexts (bus operating organisations), where it does not acknowledge the role of the psychological factors which influence behaviour. A combination of both (organisational and individual focused interventions appear more promising than one without the other (Semmer, 2006).

Previous research has suggested integrating models for reasons such as an overlap between the constructs (Armitage & Conner, 1996; Fishbein et al, 2001) and to gain a more comprehensive understanding of behaviour and account for external factors. In order to gain a closer understanding of behaviour and change, there is a need to understand behaviour in the light of wider, comprehensive frameworks. A framework which envelopes a wider approach, appraising the wide range of factors which influence behaviour. There are many factors which influence how individuals behave, and all these factors are not captured in many health belief models. There are grey areas which cannot be explained if we use a narrow framework to understand the diverse and wide range of factors influencing behaviour and change.

A closer and more refined understanding of how environments can affect one's capacity to change behaviour (in a given setting) is required. There is a need to understand how environments impact and interact with subjectively experienced motivations, as well

how these motivations are influenced through the personal self and the external environment. A thorough and wide ranging understanding of behaviour in particular contexts is necessary to develop and/or evaluate behaviour change interventions.

In order to gain a better understanding of health related behaviour in a workplace setting, a focus on the impact the environment/job has on one's health and wellbeing is required. Secondly, what role does this impact play in relation to health related behaviour. The clearer framework is required addressing the interplay between an individual and the work environment. What is the result of this interplay? For example Tse, Lin & Mearns (2006) in their review present a framework on bus driver's occupational stress. The stressors (physical environment, job design and organisational issues), mediating variables (demographics, personality) and outcomes (Physical, psychological, behavioural and organisational) provide us with an overview of variables contributing to stress and its outcome. Although this is a useful framework, the relations and interlinks between the variables are unclear. There is not a clear acknowledgement of how the cognitive aspects and coping mechanism are formed, maintained and sustained to manage and deal with these stressors.

In order to provide solid grounds for developing effective interventions to change health behaviour, there is a need for theoretical frameworks which envelopes wider approaches, appraising the wide range of factors which influence behaviour, which is replicable, consistent and systematic.

1.6 The current study

There is a need for research to enable a deeper understanding of the factors which play a role in bus driver's perceptions and beliefs of optimal health and their capacities to

achieve it. This would encompass a number of factors such as motivation and the possibilities there are in their workplace. In order to gain a closer understanding of factors influencing behaviour, the study explores the influence of subjectivity and its impact on behaviour and behaviour change in a work place context.

There are several layers of the same issue which the current study aims to address. Firstly, it will explore health perceptions and beliefs i.e. how bus drivers understand and make sense of 'health', and whether there are any differences as such between the different ethnic groups. It aims to explore the depths of how and in what way 'health' is embedded in their lives. It is hoped that this information will be useful to understand the spectrum which defines health amongst this workforce.

Secondly, health behaviour in a workplace context and the relations between health and work for bus drivers will be explored. It will study the context where health behaviour is related, embedded, and intertwined to the everyday lives as a collation of activities/habitual patterns etc, and be open to this being subjective to many factors. It will further also address everyday work demands and tasks, along with roles and responsibilities. Health is therefore not independent but is rather dependent on and related to such factors. These can and most often do differ amongst migrants comparatively. Despite guidance from national campaigns on recommendations on diet intake and duration and intensity of physical activity, there is a difference in perceiving and understanding these campaigns (Netto, McLoughlan & Bhatnagar, 2007). These campaigns have often been criticised to 'lack sensitivity', as these do not account for cultural aspects or the target group's social resources (Jensen & Halkier, 2011).

Furthermore, tailoring interventions to suit the needs of different groups has been, relatively speaking, much more effective (Kong, Singh, Krishnan-Sarin, 2012; Mier et al, 2010). With regards to health behaviour, diet and physical activity behaviour in a workplace context will be explored.

Lastly, the current study attempts to study the psychological, contextual and cultural influences on diet and physical activity health behaviour. It is well-established that health related behaviour as well as environmental factors which influence behaviour contributes to the increasing overweight in employees in the bus industry (Winkleby et al, 1988; Ragland et al., 1987). However, a closer understanding of the interplay between individual level factors and their relation to the environment i.e. workplace is investigated.

The findings will be related to previous theoretical constructs to understand the relative exchange of influence between the perceptions of health, the workplace context and any cultural features which may play a role in health related behaviour. It is hoped that this will contribute to guide towards a closer understanding of the role of the environment on bus drivers health and well-being, and furthermore contribute to gaining a closer insight into the interplay between the individual and their environment. As the behaviour change wheel envelopes a wide level of influences through a very thorough, precise and much clearer approach, the constructs will also be discussed in light of this framework (Michie et al, 2011).

1.6.1 Primary objective and aim:

The overall aim is to develop a framework to illustrate how the work environment, individual and cultural variables interplay in relation to diet and physical activity behaviour in a workplace setting.

The overall objective of the study is to identify factors which play a key role in diet and exercise behaviour for migrant and Danish bus drivers in a workplace setting.

1.6.2 Secondary aims:

A) Understand and identify similarities and differences in bus drivers health perceptions and beliefs
B) Understand bus drivers everyday work context and its influence on diet and physical activity behaviour
C) Understand the role of the culture in relation to health

1.6.3 Secondary objectives:

A) Identify factors which form bus drivers understanding of health.
B) Identify factors and their interlink with bus drivers health in an everyday work context
C) Develop a set of theoretical based key indicators to be used in intervention design and implementation
D) Identify any cultural aspects in relation to diet and physical activity

Chapter 2

Method

2.1 A brief overview of the study site

The workplace where the current study was carried out is the largest bus company in Denmark and is part of the group consisting of public transport companies, being one of the largest in Europe. The largest site for this workplace in Copenhagen was the chosen site of the study. This was particularly due to the high number of employees from the different ethnic backgrounds (Somali, Turkish and Pakistani). The health aspects of this study group have been highlighted in the introduction. Previously, there have been health-related initiatives implemented at this organisation, yet the sustainability of those initiatives remains questionable. Majority of these initiatives have been consultancy based projects, hence not been an integral part of the organisation. This has posed major challenges for this industry, as the quality of work-health remains somewhat unimproved.

2.2 Participants

A total of sixteen male participants (*n=16*) took part in this study. 25% (*n=4*) of participants were from each ethnic group (Danish, Somali, Turkish and Pakistani). Demographic information is presented for each participant. See table 2.a.

The age for all the participants ranged from 40-63 (*M = 50.8, SD = 7.05*) for total group. Mean age for Danish group was 56.75 *(SD = 4.27)*. With respect to migrant participant, the mean age for Somali participants was 48 *(SD = 4.2)*, for Turkish

participants the mean age was 51.75 *(SD = 7.27)* and 47 *(SD = 9.01)* for the Pakistani participants. On average, the Somali participants had lived in DK for fifteen years, and worked in this industry for approximately seven years. The Turkish participants had lived in DK for thirty-five years, and worked in this industry for fifteen years. The Pakistani participants had lived in DK for seventeen years and worked as a bus driver for nine years.

Even though BMI (WHO, 2012) was calculated based on self-report, it gives an indication of the participant sample in this study. 31% of the participants were classified as 'healthy', 69% as overweight, and 19% as severely overweight. Please see appendix III for participant demographic form.

Table 2a. Demographics of participants

Participant ID	**Ethnic Origin**	**Education**	**Years lived in Denmark**	**Years in this job**	**Classification according to BMI (kg/m^2)**
1001	Danish	Skilled (Basic Vocational Education or apprenticeship)	53	3	Healthy
1002	Danish	Skilled (Basic Vocational Education or apprenticeship)	54	21	Healthy
1003	Danish	Another education	56	9	Overweight

		(teacher)			
1004	Danish	Another education (student)	63	25	Healthy
2001	Somali	Up to 3 years of education	17	8	Overweight
2002	Somali	None	14	6	Overweight
2003	Somali	None	12	4	Overweight
2004	Somali	None	17	9	Obese
3001	Turkish	3-4 years of theoretical/practical education	29	10	Obese
3002	Turkish	Higher education (more than 4 years)	40	10	Healthy
3003	Turkish	Another education	31	10	Overweight
3004	Turkish	None	41	31	Obese
4001	Pakistani	Undergraduate degree	17	12	Overweight
4002	Pakistani	None	20	9,5	Healthy
4003	Pakistani	Undergraduate degree	8	3	Overweight
4004	Pakistani	Secondary school	22	12	Overweight

* *BMI (kg/m2) based on self-report*

2.3 Recruitment

A number of recruitment methods were adopted for the study. This was particularly due to the previous experience of carrying out projects with this organisation and a low participation rate in the beginning of the recruitment process where a number of barriers were faced whilst recruiting for the study. Emails were sent out to all employees of the organisation which encouraged taking part in the research study. Recruitment posters were displayed at different stations (the stations were a communal area for all employees). Initially, this provided limited success in recruitment. Despite the low participation rate of this group (in other studies), there was an interest expressed in the project at a later stage. A snow-ball method of recruitment was applied, as this was the most appropriate and fitted well in the organisational/workplace context. All participants were recruited through face-face method. Prior to the interviews taking place, all participants were followed up to confirm time and location over telephone. All interested employees were provided with a brief outline of the research project and if they were still interested, a confirmation of participation was sent to them. A suitable time and location was agreed with each participant.

2.4 Procedure

2.4.1 Context observations

Observations have the benefit of offering the researcher the opportunity to collect data without direct interaction with the ones being observed. "It does not rely on what people say they do, or what they say they think. It is more direct than that. Instead it

draws in the direct evidence of the eye to witness events first hand. It is based on the premise that, for certain purposes, it is best to observe what actually happens" (Ballinger, Yardley and Payne 2004).

I want to understand the world from your point of view. I want to know what you know in the way you know it. I want to understand the meaning of your experience, to walk in your shoes, to feel things as you feel them, to explain things as you explain them. Will you become my teacher and help me understand (p.34)

Spradley (1979)

The method of observation as an initial stage of data collection was chosen as the researcher wished to gain an observed account of the routines, schedules, and mundane aspects of the study group. Furthermore, the researcher aimed to obtain a closer account of participants 'work day', the culture of the organisation and the processes at hand, as well as an insider and detailed perspective prior to gaining an insight into their health aspects.

In order to capture the meaning and practices of people from their everyday contexts, we are drawing the understanding through treating participants as objects for scientific purposes; where there is a conscious attempt from the researcher to exclude any subjective bias, and take an objective 'scientific' position. A certain distance was maintained to aid the analysis, particularly during the preliminary findings. This was done to produce an accurate representation of the workplace context, one which was free from the potential researcher intrusion. It was attempted to take an objective stance

but that at times it was necessary to engage and interact with the participants It was aimed to focus on the social processes at hand as well as the influences it has on the individual's behaviour within a particular natural setting (workplace) using techniques well- known in ethnographic studies.

In order to apply a relatively smooth 'entry' into the field, casual and informal introductions were made to the employees during the introductory visits to the different 'sites' of the workplace. The introductory visits provided the opportunity to develop informal and casual conversations and inform participants of the purpose of the study. This was also an 'ice breaker' so a familiarity and trust could be developed earlier. An open and positive approach was required.

Prior introductions through weekly newsletters to the employees of the organisation had already been made so they were aware and expecting to meet the researcher. This allowed for a sense of preparedness and familiarity for the employees.
A substantial periods of time was spent 'in the field' (a plan for each day (morning, afternoon and evening guided the process), watching and casually 'hanging around' till the researcher was familiar with group under study and vice versa, as well as attempting to immerse fully in the milieu at their workplace. A holistic approach was adopted to allow the researcher to 'live in' the participants work day. After having gained participants interest to share insights into their workday, 'follow' trips were suggested by participants. This consisted of 'following them' through their work day. This granted insight into the daily structures and routines of such a job. Additionally, it provided

insight into aspects of barriers, opportunities for health related behaviour and realistic observational insights.

Interested participants would approach the researcher to inquire further about the project. . Field notes were taken consistently in the initial periods of data collection. As time passed, the routines, habits and customs which were under observation became more familiar and consistent field notes were therefore not required as much.

The researcher chooses to describe the method as 'contextual based observation', as the contextual influences on ones behaviour were being observed. The practices, routines, and influences on health behaviours of this group were observed in its context in the naturalistic setting. Due to the nature of observation, the researcher attempted to carry out observations both as a passive researcher (where the researcher attempted to remain 'as far away as possible' from the processes in the given setting). At other stages of observations where this was not possible, the observation can be described as being closely involved without being obtrusive. This allowed observation of the context from a closer perspective i.e. to observe the processes (day to day work processes) which are present and how these processes influence health related behaviour. This type of observation is described as 'participation in the lives of the people under study with maintenance of a professional distance' (Fetterman (1998:35).

Visuals of the appearance (lay out of the different sites, organisation of the interior and what the interior entailed) were taken. These were used to assess any opportunities (for

physical activity/exercise or healthy food options) in a physical setting available to the participants.

The observations were overt in nature in as much that there was no attempt to disguise the identity of the researcher. However during observations, an unobtrusive and objective position was adopted. It should be highlighted, that the researcher was not a detached 'objective' researcher manipulating and controlling the variables that affect their behaviour (O'Connel-Davidson & Layder (1994:185). A passive approach was adopted at times when considered appropriate, and an active approach (where the researcher actively engaged) with the participants was adopted. This was entirely dependent on the 'milieu' experienced at the sites, and also to remain unobtrusive in any way.

Once familiarity and trust were considered to be well established with the participants, there was an opportunity to approach and start recruiting participants using a snow-ball method (see recruitment). The observations provided a deeper insight into the context of the working environment and gave the researcher a relatively in-depth exploration of the structures around the participants. These will be evident in the results section through the analysis presented.

The recording, interpretation and analysis of such data are a complex process. However, several methods were used to collect observation data. In order to avoid being obtrusive, 'on the spot' notes were taken which were elaborated later. These 'on the spot' notes would primarily consist of a few details noting concrete points about social processes

within that particular given setting, date and location. Irregular aspects and incidents would be recorded as memos.

After assessing appropriateness on certain visits, field notes were taken. Field notes would capture the form of reflections on the researcher positioning in the field. Field notes consisted of 'relatively concrete descriptions of social processes and their contexts' (Banister et al, 1994:40). Video recordings were only taken on the first two visits to the site. This was in essence to capture the daily routines and changes in work shifts etc. Participants were asked for verbal consent for audio-recordings to be used. A diverse range of methods and techniques were used during the observation field work, and the collation of the diverse data was used and integrated in the data analysis. Becoming a natural part of the setting and the work lives of the participants being studied provided an opportunity to gain a closer understanding of their work-lives, as well as the context influencing their health.

During observations, there were a number of 'every day conversations' which took place in a very casual manner. Spending time in the environment where the interviews were conducted gave an introduction and a sense of understanding of the daily routines, work structure, psycho-social milieu, and also provided an indication of what the interviewees would be likely to discuss and share.

2.4.2 Interviews

Semi structured interviews were carried out to gain a more in-depth understanding of participants health perceptions and their diet and physical activity in an everyday work

context. The semi structured interviews went beyond the exchange of such conversations, and were an opportunity to question and listen with a particular purpose of attaining an insight into participant's lives and to explore deeper unconscious layers for the topic at interest.

Interviews vary according to content, such as seeking opinions, perceptions and attitudes, narratives and personal life histories (Flick, 2002). In order to frame the interviews, the participants were provided with a context for the interview through an initial verbal briefing prior to the interview took place and a verbal debriefing afterward. The interview situation was defined very explicitly to the participants i.e. the purpose of the interviews, use of tape recorders etc. Participants were also asked if they had any questions prior to the interviews. The initial first few moments of the interview are decided, as the researcher lead the conversation and opened for dialogue, and a natural conversation flowed through the interviews.

All semi-structured interviews took place at the respective workplace setting. All interviews were carried out in Danish except one, where the participant wanted to be interviewed in English. The interviews ranged from forty minutes to one hour and forty minutes. All participants provided written consent prior to the interview. Participants were encouraged to be open and talk freely. This was considered to be a positive method for initiating a constructive interview. The interview was guided by an outline of topics which needed to be covered in all interviews (please see appendix I for interview topic guide). Even though the questions formed a part of the outline, it was not important to remain consistent with the sequence of the questions, as long as all

topics were covered. The questions were constructed in a sense so they should be easy to understand and free of academic language.

The questions were developed to maintain a certain sense of dynamics. It was aimed that that they should promote a positive interaction and keep the flow of the conversation going. This would motivate them to talk about their experiences and feelings. Probes were also used in each interview to supplement if the participants had a difficult time elaborating. Probes were particularly very useful in the interviews with the migrant participants as their first language was neither Danish nor English.

The questions constructed for the interview topic guide included questions on their everyday life and how their perception of health and understanding of a healthy lifestyle fit into their everyday life. The researcher also tried to gain an overview of their life-perspective and certain events in their life which could have had an effect on their well-being (migration being a central event). A closer understanding of participant's routines and their day–to-day living was needed. In addition, there was an attempt to understand how and in what sense health was a part of their lives. This would allow a deeper insight into how different health practices and behaviours fit into their lives, particularly work-life. Participants were asked about what they thought was important regarding their health and well-being and their past experiences of changing behaviour, and if they were looking to change a certain behaviour (and if so, how would they go about it). Questions on diet and exercise practices and everyday living were asked in order to get an understanding of their choices and opportunities for diet and physical activity. Topics such as how the work structure affects any attempts or current health behaviour were

also discussed. This provided a deeper insight into how their shift-work structure general day to day structure can have a significant impact on their health. The extent to which their workplace can support and change any structure to positively affect the well-being and health of the employees was also discussed. Interviews were concluded by providing the participants an opportunity to raise any questions.

All participants were debriefed and their employee number was noted as they were given incentive for participation.

2.5 Data Analysis

2.5.1 Use of Grounded theory

All interviews and field notes were transcribed ad verbatim. Field notes, memos, and on the spot notes were transcribed at the end of data collection, alongside the transcription of interviews. A conscious decision was made to include and code the observational and interview data and use the same coding scheme for both. The two sets of data were put under analysis to provide a bigger picture. The observational data analysis supplemented the interview data in ways which was not possible for interviews to capture. Using the same coding scheme for observational data permitted the integration of both the observational data and interview data to immerse fully, in order to provide a through and in-depth understanding of role of the social processes and context.

For anonymity purposes all interview participants were given a ‘pseudonym’, where their ethnic origin could also be identified. All Danish participants were ascribed a pseudonym starting with 1, (1001, 1002, 1003, 1004). All Somali participants were

ascribed a pseudonym starting with 2, (2001, 2002 etc.), Turkish with 3 (3001, 3002 etc.) and Pakistani with 4 (4001, 4002 etc.). The process of analysis was carried out in English, and the "quotes" from participants extracted for the theses have been translated from Danish to English, and back to Danish. The translated quotes were checked against the 'original' extracts. The translations have been confirmed by a third person. This was done to ensure that the meaning was maintained and the essence of expression wasn't lost in translation –to keep it grounded in the data

In order to understand the psychological processes when engaging in/sustaining a certain health behaviour (diet or physical activity), there was a need to investigate the interactions and effects of these on the social processes (Willig, 2001).

For data analysis, a grounded theory approach set by Strauss & Corbin (1990) was adopted. Willig (2001) sets out an abbreviated version of the grounded theory which has been applied in this study. Willig's version suggests that the data can be collected before the start of an analysis and the transcripts then analysed using grounded theory principles. Due to the context of the workplace and limited access to participants, it was not possible to gain continuous access to participants (for theoretical sampling purposes); Willig's method was therefore considered most appropriate.

For the purpose of the DPsych, it was necessary to be aware of the previous literature. However, consultancy reports based on the same organisation were avoided in order to avoid forming biases.

Glaser and Strauss (1967) suggest that the researcher should try and avoid having a detailed reading of the literature as pre-conceived ideas and formulations can hinder openness to the data collected. Once the data has been analysed and the theories emerged, should the researcher refer to the previous literature in order to relate it (Glaser and Strauss, 1967). As mentioned above, there was an understanding of the previous literature, as a rationale needed to be developed in order to carry out the research.

2.5.2 Open coding

The first stage of the analysis started with 'open coding' which involves going through the transcripts systematically and labelling concepts and categories. In order to become 'close' and thoroughly familiar with the data, the transcripts were re-read several times. For the purpose of close analysis of the data, each small segment of the text was analysed, and line –by-line analysis was carried out on all interview transcripts (Charmaz, 2008). This provided grounds for a very detailed and in-depth analysis of the data. It is further a recommended method when using the abbreviated method of analysis. According to Willig (2001) 'the depth of analysis generated by line-by-line coding is needed to compensate for the loss of breadth that accompanies the researcher's dependence upon the original data set'.

Where possible, 'Invivo' codes (words or phrases used by the participants) were used, as its use encourages the researcher to stay close to the data. The labels given to each segment of the text/line was written next to each line. Once all the labels/codes were given to all the transcripts, these were then moved to a database where the transcript segment, line number and code were entered. Additional 'memo writing' (thoughts,

feelings, ideas) were also noted next to each code, as this is a vital part of the analysis process (Strauss & Corbin, 1990).

After all the transcripts were coded, the method of 'constant comparative' analysis was applied in order to group the codes into categories. The 'constant comparative' method is described as *"...first comparing items in each category, then drawing up categories, and, finally comparing categories"* (Strauss & Corbin, 1990). The researcher looked for patterns and relations in the coded data, and incidents and codes which were similar were grouped under the same label. By using this method, the theoretical framework began to develop.

The method of constant comparison is highly encouraged to be used through all stages of analysis. This was also adopted in this analysis. Any relationships between the codes and newly developed categories were noted in the memo notes for reflection and later use. This also allowed for grouping codes into categories.

Even though memo notes were described at the initial stage, the researcher highlighted additional memo notes (questions, thoughts for reflection and considerations) when grouping codes together in the categories.

After the open-coding stage of the analysis was complete, the concepts were analysed to form any similarities and also to refine the concepts. This required continuous referencing between the transcripts in order to review if any new concepts that were emerging were in line with the previous concepts or whether new ones were found.

Once this stage was complete, the analysis was at the stage of ‘saturation’. By this stage the data had been analysed to the possible extent so that the researcher was ‘to be sure that we have a full and detailed understanding of the phenomenon and can present a full account of it’ (Chamberlain, 1999). Once a transcript did not allow for new categories to be formed, it was then established that the analysis had reached the data saturation stage.

In order to avoid bias, and for credibility and confirmability purposes, a ‘verification step’ was adopted (Elliot, Fischer & Rennie, 1999; Ballinger, 2006). This process was assisted by discussing emerging theories and the process of analysis with another senior researcher. The role of the senior researcher entailed discussing the empirical data as well as the themes and concepts evolving, as well as discussions on the methods of grounded theory analysis. This process was relatively consistent in the initial stages of analysis where I was encouraged to question and justify my developing interpretations. It was an opportunity to apply a dialectic method to emerging theories and the analytical process.

The senior researcher, with extensive experience in this method of analysis, also looked through several transcripts and the analysis. The researcher received continuous feedback (in the forms of suggestions and comments) and opportunities for discussion.

2.5.3 Axial Coding

After the initial themes were discussed with a second researcher, follow up feedback and comments on the emerging themes were discussed on a regular basis.

Unlike the 'open coding' stage where data is used to open up for analysis and a broader understanding for the theoretical framework, the stage of axial coding involves a confirmation of what has been analysed and develop it further to an abstract level.

This phase involves categorising the categories into 'higher order categories' which are concepts of an abstract nature in order to form a theoretical framework. Strauss & Corbin (1990) state:

''Categories are higher level and more abstract that the concept they represent……Categories are the "cornerstones" of developing theory. They provide the means by which the theory can be integrated".

Besides categorising these into abstract higher order categories, the aim is also to identify connections and relations between these categories. The categories were grouped together in higher order categories and were given a label as well as described how they related to each other. Some categories were merged together into one higher order category and the feedback from the second researcher was taken into account whilst doing this. Below are a few examples of merging few categories into one higher order.

'Childhood experiences', 'previous health related knowledge', 'perceptions of pre-migration life', 'health related quality of life, social aspects (physical activity) pre-Migration' were all grouped together to form *'Health behaviours as collective social processes – pre migration.'*

Similarly, ‘day-structure’ was grouped together with ‘contextual influence’ as the ‘contextual influence’ encompassed the ‘daily structure’.

2.5.4 Theoretical coding

The theoretical coding stage involved looking at relationships between the different higher order categories and establishes the theoretical framework using ‘selective coding’. The process of selective coding defined as ‘establishing saturation how the theory ties together as whole, and establish the core category’ (Chamberlain, 1999). The core category is defined as ‘the one category which identified what the research is about, the one which is abstract enough to encapsulate your storyline’ (Bartlett & Payne, 1997). The relationships of the categories to the core category formed the theoretical framework. In order to support the validity of the analysis, a second researcher was closely involved with the analysis.

Coding paradigm as suggested by Strauss & Corbin (1990) was used for the development of the theoretical framework. This involved relating categories to the core category and linking them in term of causes and context, as well as looking at consequences and outcomes. This was referred to as a useful and guiding tool for the development of the framework as it supported being thorough with the analysis When the empirical data did not allow to conclude on ‘cause and effect’ in all instances, a sound judgement was made on a few occasions.

The similarities of categories across the interviews was collated together to form an overall theoretical framework. The differences across the different ethnic groups were highlighted where appropriate.

2.6 Quality in qualitative research

One of the main and very vital contentions of qualitative research is to understand that qualitative research is not solely about collecting, analysing and reporting non-numerical data. More than this, it is also about understanding underlying meanings and understanding of people. A qualitative method has been applied to gain a closer insight into the 'lived' experiences of the people under study. Only by providing their 'story through a lens', can we understand how and in what way they make sense of their world. Similar to quantitative research, appropriate steps need to be taken to ensure a validity and reliability in qualitative research (Smith, 1996; Willig, 2001; Flick, 1998; Flick, 2002). Qualitative research is confronted with a wider challenge from the dominating sciences (e.g. quantitative research) .of how to assure the value and reliability of their research. It is therefore often suggested to justify research studies through set and established criteria suited to qualitative research. It's rather much hopeful to believe as Kvale (1996) suggests:

"*knowledge claims that are so powerful and convincing in their own right they carry the validation with them, like a strong piece of art"*.

The use of appropriate tools will minimise the traditional challenge between quantitative (also referred to as 'hard' research) and qualitative (also considered 'soft'

research) research. The traditional criteria of evaluation in research rest on the 'norm of objectivity'. The important goal therefore is to limit (wherever possible) the effects of research bias (Henwood & Pidgeon, 1992).

In order to ensure a good quality of the current study, the researcher aimed to thoroughly adopt principles of good quality qualitative research (Yardley, 2000). These principles are being sensitive to the context, commitment and rigour, transparency and coherence and impact and importance.

The researcher aimed to adopt sensitivity to the theoretical context by staying abreast of the gap in the literature and try and explore and understand health behaviour beyond what is already evident in the literature. The researcher was well informed about the 'possibility that the object of the research must be allowed to object' (Kvale, 2003). The current study aimed to conclude on psychological aspects which were applicable when developing interventions to change health related behaviour in a workplace setting, staying sensitive to the influences contexts and environment (workplace) can have.

It is just as vital to establish a rigour credibility of qualitative research by using appropriate criteria as the roots of qualitative and quantitative research are different (Smith & Osborn, 2003). This further suggests that when qualitative studies are evaluated there is a need assess the applicability of the concepts derived from qualitative work rather than looking at sample size, statistical power or participant selection (as is done in quantitative studies) (Conrad, 1990).

Henwood and Pidgeon (1992) have identified a set of criteria which characterise good quality research. Whilst carrying out the current study these criteria were referred to. The criteria are known as the importance of fit, the integration of fit, reflexivity, documentation, theoretical sampling and negative case analysis, sensitivity to negotiated realities (participant feedback) and transferability.

The transcription, analysis, verification required a very thorough approach prior to reporting. The theoretical notes carried out during the analysis have also been integrated into the reporting of the findings. The data from the observations and interviews have been integrated for the purpose of reporting. In order to 'justify' that the emerging categories fit with the data, explicit and detailed accounts of how these have merged and evolved have been provided to ensure importance of fit and integration of theory. For reflexivity purpose the researchers role has been discussed in further detail below as well as the participant –researcher relationship and the position the researcher takes whilst collecting empirical data.

A comprehensive and thorough audit trail (for documentation) was kept in the form of theoretical notes, general notes, memos, diagrams. The final stages were also discussed with a co-researcher for feedback and levels of interpretation.

Due to limited access to the participants, it was not possible to explore further cases for negative case analysis, However, the emerging theoretical framework was continuously developed and modified as new 'knowledge' was being generated at the different stages of analysis. The exploration of 'negative cases' was continuous through the data already

collected. With regards to ‘sensitivity to negotiated realities’, participant validation was not possible. ‘Credibility checks’ (Elliott, Fischer & Rennie, 1999) were carried out by discussing with a senior researcher. Furthermore, for the purpose of this criterion, the analysis was elaborated and illustrated in the analysis with quotes from the data transcript for assessment of fit between data and interpretations of the researcher. Having extensive quotes to choose from, there was a need to apply criteria to choose quotes which would form part of the analysis. These criteria consisted of choosing quotes which best illustrated and emphasized the argument being made in the analysis. Suggestions to how the research may be applicable beyond the current context (in relation to transferability) will be illustrated in the discussions section.

2.7 Reflexivity

Reflexivity refers to assessment of the influence of the investigator's own background, perceptions, and interests on the qualitative research process (Ruby, 1980). The effect a researcher’s position has on the data has been discussed by several (Barry et al, 1999; Koch & Harrington, 1998; Malterud, 2001). I was aware that the positioning I took as a researcher could somehow affect how participants responded and behaved during the data collection period. As an observer I had several choices in the way I presented myself. I was very cautious about how participants would interpret my role and how this would affect their behaviour and thereby my interpretation of the observations. I consciously presented myself as a student rather than a professional under training. I also chose to dress informally to reduce any barriers for the participants in approaching me. Through the data collection I was aware of how for example my age, gender and/or ethnicity would be received by the participants and possibly affect participation. I took

up this opportunity to 'fit into their world' and minimise barriers to participation. At certain times I experienced my ethnic background influenced how I was approached by participants. This may be due to the similar ethnic background with some of the participants, where a sense of familiarity may have a posed an effect on approaching and discussing some issues in an open manner. Furthermore my appearance, demeanour and way of speech were also more casual in nature to minimise any additional barriers. Although, I was aware of the effect of my own stance during data collection, I maintained an ethical and sound professional role in my approach to discussing several factors with all the participants – regardless of mine or their background/gender/ethnicity. With regular supervision and the use of reflexive strategies, I was able to move beyond the initial interpretations. I was encouraged to continue this reflection process and raise questions to my reflections and interpretations. I regularly discussed a number of accounts with a colleague who was also present during the data collection. This practice helped consider different levels of interpretation as well as sharing of different experiences of the position one takes as a researcher.

Furthermore, adopting strategies to promote reflexivity such as field notes, memos, reflection of my own thoughts, feelings, experiences of interviews and observations and carrying out this project in this setting- helped to gain a reflective approach to the analysis. These notes and memos and reflections were referred to during the analysis and helped to understand the data from a more objective point of departure at the analysis stage and allowed me to be consciously aware that my role as a researcher was addressed within the analysis. This also helped develop ideas for future research.

Referring to the literature also helped to form ideas in line with what I found during the analysis

2.8 Ethical considerations

The study was registered, and permission was granted by the Danish Data Protection Agency. The study was carried out in line with the ethical guidelines. The study was registered with the Danish Data Protection agency as some of the data that was collected was sensitive information (Sections 7 and 8 of the Act on Processing of Personal Data). The Danish Data Protection agency can impose a number of conditions in addition to the general provisions of the law which must be observed. Anonymity was required to be observed after data collection was complete. Furthermore, the data was solely to be used for research purposes.

2.8.1 Additional ethical considerations

All participants were asked to fill in a written consent form (Appendix II for consent form) and were briefed on the project. All participants were informed that they could leave at any time during the data collection process. Once the data was recorded and transcribed ad verbatim, participants were anonymised using pseudonyms. The audio recordings were used for transcription purposes only.

Chapter 3

Results

3.1 Overview of theoretical framework

The central theme encompassed exploring understanding of health across bus drivers from four different ethnic backgrounds (namely Danish, Turkish, Pakistani and Somali), which goes further on to explore the 'requirements' for change and through understanding the narratives, it has been aimed to understand their health behaviours in a workplace context. As a grounded analysis approach was adopted, the aim is to provide a detailed account of the findings with respect to key aspects found in the data. In order to provide a more narrow analysis on participant's health behaviours, which have been prevalent from the data, this study also explores a more rounded view of the participant's beliefs, understandings of what defines being healthy as well as their position in the environmental context they are part of.

The overall core category has can be defined as -

'Impact of Individual, contextual and cultural influences on health behaviours'

This framework attempts to highlight the individual, contextual and cultural influences on diet and physical activity health behaviour and explores the relations between these in a workplace environmental context.

Individual aspects have been defined as psychological (intrapersonal, cognitive etc.) factors which influence behaviour. Contextual influences in this respect are primarily the influence of the environmental context they work in. The cultural influence is the

participant's cultural background and the influence it may have on their current health behaviour. In order to understand health behaviour (diet and physical activity) in a work environmental context, and gain insight into understanding behaviour as an outcome of internal and external influence, the reciprocal relationship between the individual and the external environmental context are illustrated.

The overall core category is supported through five higher order categories. These have been defined as

- Meanings of health
- Health behaviour and the potential to change
- Adaptation
- Workplace influences on health
- Migration influence

A definition of each higher order category has been provided in detail, whereas the relations between the categories and sub categories have been illustrated through the use of quotes from the interview transcripts. Summaries are provided for each framework as well as illustrative pictorials. The pictorials demonstrate the relation between the different levels of categories and how they are linked to each core category. Where possible, each category is enhanced further through to an additional level of analysis (sub-category). Table 3.a illustrates higher order, categories and sub categories, which form the overall theoretical framework. Quotes from the transcripts have been used to further illustrate the message being conveyed. A variety of quotes have been chosen from different participants (different ethnic backgrounds) to present any similarities or

differences. The pseudonym of the respective participant is used to aid the reader of the ethnicity of the participant (1001-1004 –Danish Participants, 2001-2002 - Somali Participants, 3001-3003 - Turkish Participants, 4001-4004 - Pakistani participants), and the position of the extract in the transcript is denoted by 'L' (line). Any key differences between the migrant participants and Danish participants will be highlighted where found.

Table 3a: Overview of theory: Higher order, category and sub categories

Higher order Category	***Category***	***Sub-category***
Meanings of Health	*Holistic views*	*Psychological*
		Psychological and physical wellbeing – interlinked
		Family and Social relations
		Religious faith - health connection
	Absence of Disease	*(Un)diagnosed*
		'I feel fine'
		Religious faith - health connection
	Self-perceived Equilibrium	
Workplace influences on health	*The (workplace as a) risk environment*	
	Job structure	*Lack of autonomy*
		Having to be sedentary
	Needs	*Basic and structural*
	The spill-over effect	
	Psychosocial aspects of the working environment	*On the wait*
		Mobile

Health behaviour and the potential to change	*Day structure*	
	Intrinsic desires	*Wants and needs*
		Should's
	Choices and preferences	*Influential others*
		Knowledge
		Previous experiences
		Familiarity
		Physical & Psychological factors
		Availability and access
	Routines and habits	*No change required*
		Perceived change required
Adaptation	*Role of rationalisation*	
	Attempts	
	Barriers	
	Maintaining Balance	
Migration influence	*The cultural context*	
	Health behaviours as a collective social process	
	Perceived loss of possibility to change health behaviour	

3.2 Definition of the higher order categories

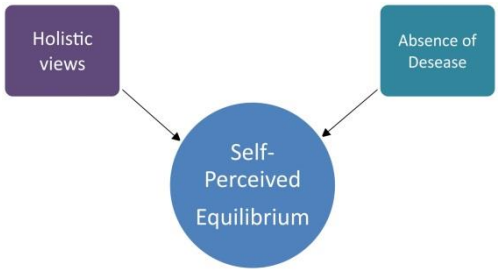
3.2.1 Meanings of health

'Holistic views' and 'absence of disease' health perceptions are concept dimensions (categories) which represent two ends of the overall higher order category 'meanings of health'. Self- perceived equilibrium is the third concept, which brings the two ('holistic

views' and 'absence of disease') together. 'Meanings of health' as a higher order category covers dimensions of perceptions of how 'health' is understood. Health perceptions and beliefs were multi-dimensional as well as nuanced in many ways (the way participants make sense of their health, what entails health). An aim for a sense of self-perceived equilibrium was most vital. The three following categories support this higher order category. Figure 3.i illustrates the relation between the three categories.

- 'Holistic views'
- 'Absence of disease'
- Self – perceived equilibrium

Figure 3.i: Relation between 'holistic view', health perceptions and self-perceived equilibrium



3.2.2 Workplace influences on health

The nature of the job and its effects on health are unfolded here. Poor physical health is perceived as being a 'result' of the nature of the job. The lack of autonomy and its effects on reduced likelihood of a stabilised empowerment is presented. The workplace is one of the many settings, within a context we 'move' in. The influences which are perceived as a result of the nature of the job on health behaviour are presented. Figure 3.ii illustrates how the categories are related. The five following categories support this higher order category:

- The (workplace as a) risk environment
- Job structure
- The spill-over effect
- Psycho-social aspects of the working environment
- Needs

Figure 3.ii. Workplace influences on health

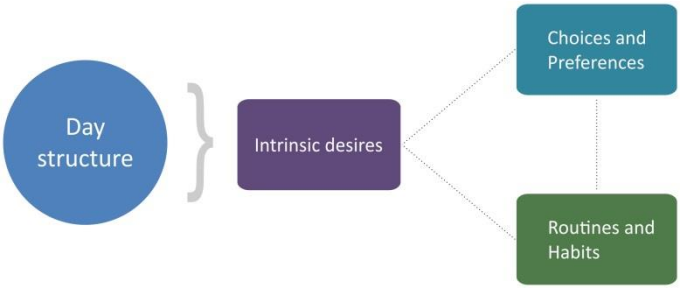
3.2.3 Health behaviour and the potential to change

This category consisted of understanding (a) the rationale and motivation behind diet and physical activity behaviours in an everyday context (b) the role and influence of this (rationale and motivation) on health behaviour. The individual's health behaviour has been explored, with a consistent account of the context and structure of their day at work. This category outlines how one maintains balance, which is achieved through a 'motivational trend'. The motivational trend encompasses the inner factors influencing diet and physical activity. The synergy between the internal and external influencing factors will be presented.

The four categories noted below support this higher order category. Figure 3.iii illustrates the relations between the categories whilst addressing health behaviour and the potential for behaviour change – the influences which are predominantly apparent and participants 'rationale for 'engagement' in diet and physical activity. The term 'potential' is used to highlight the possible potential there lies in behaviour change if perceived barriers are removed.

- Day structure
- Intrinsic desires
- Choices and preferences
- Routines and habits

Figure 3.iii. Rationale for engagement



3.2.4 Adaptation

'Adaptation' as a higher order category consists of participant's attempts to maintain a level of psychological level of balance (through adaptation) – as it is assumed that individuals are naturally inclined towards achieving psychological consistency. This process incorporates their rationalising behaviours in order to maintain a psychological level of balance. The maintenance of balance, through a natural process of adaptation is viewed as vital, whether it would mean engaging in health risk activities or not. It

suggests the cognitive rationalisation of one's behaviour (whether perceived healthy or unhealthy) which is developed through a series of patterns in their everyday lives. The analysis suggests that individuals will attempt to 'adjust' to a given situation or event. This adjustment will be a compromise between their inner desires and external demands. The key driving force of motivation is to full fill ones inner desires
The four following categories support this higher order category and figure 3.iv illustrates how the four are related.

- Role of Rationalisation
- Attempts
- Barriers
- Maintaining Balance

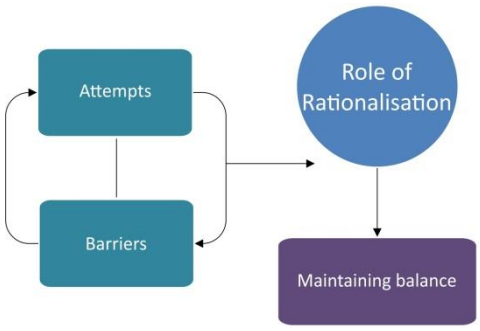


Figure 3.iv. Processes of adaptation

3.2.5 Migration influence

The positioning of the migrants in a host country brings a number of challenges to their health due to being exposed to a different environment altogether. The personal experiences of migration, from one country to another, were conveyed by most participants. Many participants reflected on their lifestyles from a pre-migration period.

The analysis suggested that pre-migration beliefs, knowledge & attitudes were strongly held on to even today. The migration process itself influenced individual's perceptions, beliefs, attitudes and behaviour in relation to their health. This higher order category is closely related to their meanings of health. It also illustrates the complexity involved in relation to how individuals make sense of health and their understanding of what it entails. The three following categories support this higher order category:

- The cultural context
- Health behaviours as collective social processes (Pre-migration)
- Perceived loss of possibility to change health behaviour (post migration)

3.3 Frameworks encompassing categories & sub categories

The respective frameworks highlighted above are unfolded here. This section illustrates the links between the categories and sub categories through an analytical account with the aid of respective extracts of quotes.

3.3.1 Meanings of health

Health perceptions and beliefs in this context should be understood as perceptions and belief participants have of how they understand health, what health encompasses, and what it entails. They are individuals self-perceived level of well-being and illness or disease. They take into account the biological, psychological and social nature of health, as well as the physical (dis) functioning, life experiences which have had an effect on health. A collection of these form participants 'meanings of health'. The analysis

illustrates that health perceptions consisted of two dimensions. One dimension being the 'holistic views' and the second being the 'absence of disease'. The 'subjective' nature of health perceptions and beliefs encompasses the participant's self-perceived health i.e. their beliefs and attitudes to their personal health. The results illustrate that we make sense and meaning of our health in the way that we do in order to maintain and sustain a sense of 'self-perceived equilibrium'.

Due the diverse ethnic participant sample it was not considered naïve that there would be found significant differences in health perceptions in the Danish and migrant participants.

3.3.1.1 Holistic views - Health Perceptions

Figure 3.v. unfolds the main categories, illustrating how the different categories are linked.

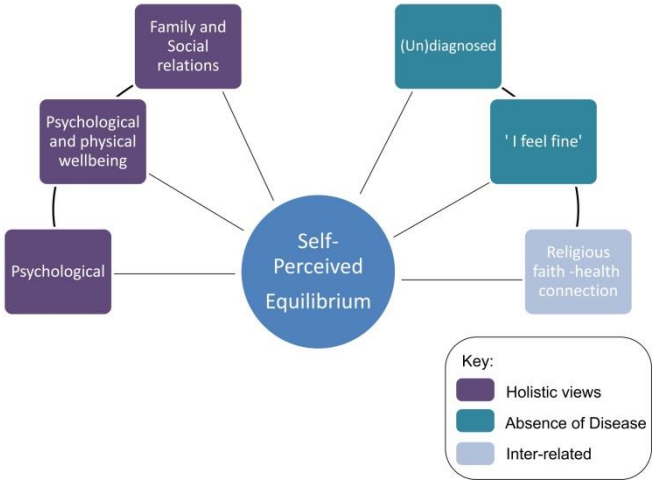


Figure 3.v. Dimensions of meanings of health

This should be understood as the perspective where the individual understands health from a standpoint where health is a ‘balance between several aspects’. These aspects (subcategories) are explored further, and details of these are provided below. Participants emphasised a number of diverse aspects which define their understanding of health and how they make sense of ‘health’ in an everyday context. These aspects collectively define ‘health’ and are not exclusively based on physical well-being alone. These encompass perceptions which portrayed understanding of health in a holistic sense. It should not be understood as merely absence of disease, but a positive and self-motivated and a dynamic state of health.

A description of the aspects as well as a description of what was found for each sub-category will be given with supporting quotes from the transcripts. It was clear that some participants weighed one aspect more than the other. A level of stability was found to be apparent, but a particular focus on an aspect alone (psychological, physical, social etc.) was not evident. A combination of all these (or several) was expressed by participants to define their health perceptions. Most of these were interlinked by participants i.e. one having an effect on the other. Please see below for list of aspects (subcategory)

- Psychological
- Psychological and physical wellbeing - interlinked
- Family & social relations
- Religious faith – health connection

3.3.1.1.1 Psychological

Psychological well-being was a core aspect in participant's health perceptions. Psychological well-being included having the 'capacity' to manage stressful factors. The stressful factors ranged from work-related stress to issues outside the workplace. Furthermore, participants also highlighted the impact their 'psychological' health had on their physical health. Psychological well-being was defined as 'being able to', empowered to and having the competence to act and engage in activities which were either a part of their daily lives or on occasional basis.

The following quote illustrates the participants' 'belief' that a sense of self-satisfaction is core for their current state of health. This state of health is determined through one's inner self, how one feels about themselves. Participants convey how their personal sense of 'worth' determined their health to a large extent.

> *1003, L-565: " ... but in my opinion one's self-worth determines whether or not one is healthy."*
>
> *1001, L/93-94:* "*No, but health is a lot of things. It is not just food. It is also a question about getting exercise and feeling good about yourself..."*

Another psychological aspect explored was the importance of psychological well-being and 'a positive mind frame' in order to maintain or improve physical health, reflecting ones competence to do so.

> *2001, L /221-222: " ....I think that it is most important that you know how you are doing"*

3.3.1.1.2 Psychological and physical well-being – hand in hand

In order to bring a change or to maintain a level of good health, psychological factors such as having a positive frame of mind were considered to determine one's physical health as well i.e. psychological state of health was perceived to have a significant effect on the physical health. The extract below illustrates the psychological state affecting physical well-being.

> *L/255-259: "Interviewer: Positive way of thinking?*
> *4004: Yes, if we have a negative mind-set it affects our muscles and our body and brain, our heart, liver and everything else are affected too"*
> *Interviewer: is that maybe most important?*
> *4004: Yeah it's very important; otherwise it doesn't make any difference."*

When referring to the psychological aspects being a component of the overall 'holistic views', it is important to acknowledge that when denoting to the psychological processes, participants express that their psychological state of health (whether good or poor) influences their physical health as much as it affects their overall state of well-being. Participants therefore highlight a notion of 'being positive' in order to gain a positive effect on one's physical health.

Participants perceived a close relation between psychological health determining one's physical health. Psychological beliefs such as optimism, sense of meaning and overall state of psychological well-being were thought to significantly contribute to a state of good physical health.

In the extract below, it can be seen that the participant express various aspects of health, also highlighting a combination of psychological wellbeing as well as physical well-being, both significantly having an influence on one another.

L/36-39: "Interviewer – you feel well mentally?
3004: Yes, of course
Interviewer: Is this important?
3004: Yes, in my opinion this is very important
Interviewer: Is this possible to achieve if you eat more healthily and get exercise?"
3004: Yes, I suppose it is"

The lack of engaging in behaviours which have a positive effect on physical and psychological health were also viewed as being a reason which could have a negative impact on one's psychological health. Many participants expressed that their ability to engage in physical activity was restricted due to other negative factors affecting their capability and competence to do so. Participants expressed psychological health determining physical health, yet also expressed that not engaging in healthy behaviours can have a direct negative impact on your psychological health. The participant below also highlights the dual importance of psychological and physical well-being.

1001, L/ 173-176: "Of course, I was nearly close to... I had a depression, kind of a small depression about it and it's damned hard to shake it off again because if you do not exercise, do not get any fresh air and do not eat properly and you stick to your bad habits, then it is obvious that it will end badly right?."

The relation between psychological health and its effects on physical health was closely related to affect one another. The reciprocal relationship between the physical and

psychological (physical and psychological wellbeing-interlinked) has therefore been illustrated as an independent sub category.

The relation between these appeared to be dependent on one another i.e. one affecting the other and vice versa.

> *4002, L/43-50: "To get in a better physical shape it is necessary to exercise a little, and if you feel well physically, then it also affects you mentally, so there's an extra bonus mentally. If you exercise... and don't just sit on the couch watching television getting a big belly, this also affects me mentally and I can easily get grumpy as I can't tackle e too much. And if you are used to exercise, or are used to take a walk and take good care of your health, you can tackle a lot of things in my opinion. I myself have experienced that before I exercised I felt good, but now I do not exercise so much. I am a little overweight, 7-8 kilos extra than normal, but when my children are screaming or something else I easily get mad."*

Health behaviours (physical activity and diet) were considered to be only one of the many features which contributed to health perceptions and beliefs. Engaging in 'healthy living' activities played a crucial role for some. Even though majority expressed the need for physical activity, a healthy and balanced diet - but this was not a crucial aspect of their health perceptions solely. Despite their objective perception of the importance of engaging in physical activity and maintaining a healthy and balanced diet, participants related their own personal behaviour to a matter of opportunity, convenience, access and enjoyment.

1003. L/155-157: " I walk a couple of times a week and go dancing, yes, it is actually tonight, it is square dance, and you exercise your lower back, your muscles and your brain is also used well, so yes I think so."

2001. L/18-19: "...you need to feel good and eat healthy food and exercise as well as you can, or have opportunity for, right"?

Even though the importance of physical activity and diet was expressed by all participants as one of the several components in relation to 'good state' of health, diet and physical activity constituted only one aspect of their health perception and their overall well-being and quality of life. Diet and physical activity is understood as 'something one engages in'. They were referred to as 'things you do' to become healthy or 'things that you should avoid' if you want to maintain your health.

4002, L/427-429: "...First and foremost it is essential to know what you eat, what is healthy, of course there is healthy food and you shouldn't eat too much, you should use a little less oil."

2002, L/12-13: "If you for instance have something to eat, then you have a good life. If you live peacefully without illness, you have a good life where you get food and exercise."

Health perceptions went beyond the need to engage in physical activity and maintain a healthy balanced diet solely as mentioned above, yet important nonetheless a combination of physical health and psychological health seemed to hold equal importance where both contributed to the overall health perceptions and beliefs.

4004, L/90-93: "If you for example are ill with your body, then you cannot do anything, if you are ill with your mind.... so you have to think of both. So this is health."

Even though psychological well-being and physical activity were interlinked, most often one was perceived to have an effect on the other.

An 'effect' relationship explored between the physical and psychological was apparent in most interviews. Please see extract below illustrating this.

> *4002, L/91-95: "First and foremost it is mealtime in my opinion, and then you have to be careful with what you eat, and then exercise. You have to burn the calories that you eat and you also have to feel good with your family, and if you are stressed I eat a lot, if I don't feel well without any particular reason, I just eat, I have experienced this a lot of times".*
>
> *2001, L/42-43: "There are a lot of people who are struggling for fitness day and night, but it means everything that you feel well overall and feel fresh"*

3.3.1.1.3 Family & Social Relations:

Social and family relations were seen as important aspects amongst all participants who held a holistic view of health.

Many participants reminisced and missed the social aspect at work. Lone-working and lack of socialising during work was highlighted by a number of participants.

> *1003, L/196-199: "Actually, in such a position like being a bus driver, but in almost all jobs, the old industrial worker, where big groups were gathered in one place, is almost gone, it does not exist anymore, almost everybody nowadays is more or less alone."*

Even though all participants expressed the importance of positive social relations and importance of family – it was clearer that migrant participants associated this much closer to the health perceptions and beliefs compared to the Danish participants. This was apparent through their expressions in interviews, whilst sharing their experiences as

a form of 'story-telling'. They particularly highlighted their relations and social support as key direct influences on their health and overall well-being. This could be due to several reasons – migration being one of them. These will be discussed at a later stage. Even though positive family relations were an important feature of health for participants, migrant participants expressed their need for positive family relations much closely related to health. This need was expressed as family relations having a direct effect on their health.

> *3004, L/124-125: "The most important thing to me is to hold on to my family and feel good with the family, nothing else. It is them I live for."*

For migrant participants in particular, good social and family relationships defined an increased level of empowerment. The reasons for this are unclear. Many expressed improved health and well-being when such relations were positive and with relatively minor conflicts. Negative relations were often expressed as having a direct negative impact on health.

> *L-93-97:"Interviewer: You have a better relationship with your daughter now?*
> *3004: Yes, I have.*
> *Interviewer: And it helps your health in some ways?*
> *3004: Yes, it does. It affected me a lot when we were on bad terms".*

A close knit familial relationship was an important aspect of overall well-being. Family relations and close knit ties were often perceived as very important for health and thereby overall well-being. The support from family in circumstances highlighted a better sense of over-all being, contributing towards health beliefs.

4004, L- 413-415: So it means that you stick together, but he is not alone, he has his friends and he has a strict connection to his family, and he knows that dad or mum will help. It is a tradition in a Pakistani family, we have close relations and we help each other…"

Other social networks were perceived to have a direct effect on one's health and well-being (see extract below). It was therefore considered important to have networks and close ties for the purpose of overall well-being. These aspects extend beyond health behaviour related perceptions of health. It was also clear that importance and priority was not given to health behaviours alone – significant family ties were often considered to have a higher influence on ones well-being.

"4004, L:416-420:….Another thing is that Pakistanis are very hospitable with visiting each other and we care for one another and we help each other in all kinds of ways...Yes, it has a positive influence on one's health"

As positive relations in the family had a direct positive effect on their physical health, similarly negative experiences in the familial relations have a direct effect on one's health and well-being to a large extent. In the extract below a complex interaction of relationships, physical health (feeling ill in the body), and psychological distress are illustrated – a co-dependant relationship.

L-244-254:
"2002: The children, yes
Interviewer: If they cause trouble,
2002 If they cause trouble, if they are not at home on time, so I get worried right, it's too late or they've got various issues, then I suddenly feel ill in my body. I feel that I have diabetes.
Interviewer: It makes me think of stress, when you are telling me this.
2002: Yes, stress, stress
Interviewer: Do you feel that you're stressed?
2002: Yes, a lot
Interviewer: Is it your work or your family?
2002: The family"

Participants from all groups expressed the effect their family relations had on their well-being (both positive and negative aspects). Their holistic perceptions of health included this as one of the core components. The effect (both positive and negative) was much clearer and expressed in several ways in the migrant interviews compared to the Danish interviews. It appears to occupy a relatively larger aspect of perceived well-being for the migrant population in this study. However, it is difficult to conclude on this.

3.3.1.1.4 Religious faith- health connection

All migrant participants perceived their religious belief to be a core element of their overall health perceptions and beliefs. This aspect was not apparent in any of interviews carried out with Danish participants. This was one of the major differences found between the interviews with migrant participants and the interviews with Danish participants.

Religious faith and practices were often expressed as a tool to get through the difficult events and situations in life. It was often expressed as a form of process to 'curing' from

an illness, as well as a pathway towards a solution. When challenges were faced, religious faith was often resorted to as a solution for hope. This was not independent but in combination with other aspects (sub-categories) identified. Whatever the solution may be was not expressed as important, but rather a strong belief in the pathway (religious faith) towards the solution.

Religious belief that God helps with their health was expressed as 'helpful'. The maintenance of their current state of health (whether good or poor) was perceived to be 'sufficiently' acceptable, as it was perceived that God was helping them. A strong faith in God's help in any health related problems was evident. It was further expressed that a state of good health was a 'gift' from God.

> *Interviewer, L/298: " You don't have any health problems? So you don't suffer from back pain because you drive for a long time or anything else?...*
> *4001: Not so far I... Allah helps me so I don't have any problems."*

The religious – health connection in relation to health behaviours such as exercise was expressed by participants in a similar way. Religious practice such as praying was considered a form a physical exercise. Participants believed this to be a form which had multiple benefits (engaging in physical activity and feeling 'relaxed') through one activity i.e. prayer.

Participants rationalised their 'prayer' as form of participating in physical activity (due to the physical movements (Bowing, standing, prostration) required as well as a form of stress-relief activity (meditation). The participant (extract below) refers to the physical movements as 'makes all those things'.

> *4002, L/431-434: "… We also have Muslims, our culture and religion, I think they stick together sometimes, it might be different once in a while, but my wife prays (salat) 5 times a day, she is more active and makes all those things, this is also a kind of exercise which I believe in too."*

Praying several times a day was considered as a form of physical activity through which benefits were achieved, as participants were 'required' (as a result of their religious teachings) to engage in several times a day. This enhanced their belief in prayer being a beneficial form of 'physical activity' as a result of the 'requirement'. This also enhanced self-perceived quality of health and well-being in the migrant participants. Please see extract below

> *L/435-439: "Interviewer: Do you think it helps?*
> *4002: Yes, it helps*
> *Interview: With your health?*
> *4002: Yes, because you are physically active, if you manage to pray 5 times as day as you have to wash yourself and pray, etc*."

- Acceptance

When participants expressed a strong belief in their religious faith, they also expressed themselves as being subjective to acceptance. Acceptance of what happens, happens at the will of a higher being i.e. God. One could argue that a positive frame of mind is apparent, as participants are 'positively' accepting any negative events, thus reducing the likelihood of a negative thoughts and associations. However, it can indicate two possible inferences (a) that acceptance (of negative events) can in some ways 'dis-empower' one to take control and have competence to make any changes themselves. (b) Due to the acceptance (of a negative experience e.g., diagnosis), participants may be able to maintain a positive thoughts and associations. Thereby more empowered to

make necessary changes when they perceive the need to. Participants expressed a high level of faith in 'accepting', and belief in God was also closely associated with acceptance. Acceptance of satisfaction with current state of health, as well as other circumstances in their everyday life.

When participants 'accepted' or 'learnt to accept' circumstances, it was not clear whether these participants were less likely to want to make any changes in relation to their health behaviours. The idea of wanting to strive for better was diffused in participants who had reached a level of acceptance.

> *2001, L/53-58: "You just have to be satisfied with what you got, right? Try to see if you really have a problem, as there are that a lot of people who do not have more than you, so you just have to be satisfied with life and health…in many different ways right...the different aspects of it yeah".*

Another dimension explored in the religious faith-health connection was a strong belief that that the state of one's health and overall life was 'controlled'/'in the hands of' God- reflecting lack of 'control' and empowerment over one's own health. Expressing faith in God appeared to help maintain a sense of well-being.

> *2002, L/125-126: "Yes, I think that everything is controlled by God, being well and healthy , or whether you feel good or bad, yes, I believe in that, yes everything is."*
>
> *4002, L/240-241: "I must also say that my wife has supported me during my entire life and she always says that you have to believe in Allah and all your problems will be removed if just you work in a good way, I think she is right".*

Some participants endeavoured that their belief in God and religious activity i.e. prayer (*Salat*) cured illness, and reduced likelihood of getting ill. Furthermore, a strong cultural association is apparent here, as well as a religious one.

2004, L/20-25: "… Not in my culture, if you for instance become ill and go to our imam, then he reads the Koran, so he can help, just as we have garlic as an example, a lot of people think that garlic really helps with all diseases. Of course now there are all different the tablets, but in that way it affects you, in many ways, religion is always affecting health where I come from, but here in Denmark, no I do not think so."

Religious activity i.e. prayer was perceived as a form of stress relief activity. This form of religious activity was also found to be perceived as enhancing empowerment and achieving psychological strength to cope with challenges faced in their lives.

3002, L/203-205: "Yes, sometimes I say to myself, ok, I ask God for care and solitude.
Interviewer: Does it help?
3002: Yes, it helps a lot…. it's great."

3002, L/207-209: "When I read the Quran, I forget everything, it's great… it strengthens me, when I read…."

Participants holistic health perceptions constituted of a collation of the aspects (sub categories) highlighted above. There was a clear variation in importance given to each aspect within this health perception category.

The lay expressions of health perceptions are understood as views encompassing several dimensions which influence our health. The effect this could potentially have on health behaviours will be discussed later.

3.3.1.2 Absence of disease health perceptions

This category displays the beliefs and perceptions of participants who based their understanding of health as a notion of 'absence of disease'. In order to further precise this, participants expressed beliefs of feeling physically well (despite being at risk e.g. overweight etc.). Majority of participants (particularly migrant participants) understood 'health' (*sundhed – in Danish*) as being un-diagnosed and the mere absence of disease. Quotes have been chosen from participants from different ethnic background, in order to illustrate any similarities or differences identified.

3.3.1.2.1 'I feel fine'

Participants highlight their understanding of good health using 'lay' terms and expressing that they 'felt fine'. As a result of not having received an illness diagnosis by a general practitioner their health was expressed as 'fine'. Not having received a diagnosis was understood and experienced as an indication of a good state of health. Use of terms such as 'feeling' indicates that understanding of health is more focused on the 'sensing' of physical well-being. Furthermore, 'health' is considered being able to function and carry out day to day activities and tasks.

The notion of religious faith was a similarity identified in both concept dimensions - whether it was holistic or absence of disease. Please refer to previous section.

Absence of disease perceptions consisted of coping with current state of health, rather than enhancing health through engaging in health promoting behaviours. A significant focus on their bodies 'responses' to events and experiences was expressed. Physical symptoms which overwhelm the body are taken note of and are thus coped with. Their

personal ability of understanding and responding to take action to improve their current state of health is taken account for.

Overweight and related risk behaviours were not captured as part of the 'absence of disease' health perception. A high level of reliance was on the health professional's opinion and/or diagnostic criteria. Lay expressions of 'health' were often expressed as having the physical capability of carrying out tasks.

Again, in the quote below it is apparent overweight and behaviours contributing to being at a high risk for disease are not encapsulated in participant's health perception. Being able to carry out daily tasks and activities provide a closer understanding of their health perception rather than a mere modern concept of health, which most often encourages and promotes optimising a wider sense of well-being.

3001, L/52-56: "If we go back to 1998 where my weight was about 100 kilos, so at that time I was healthy and without any problems, there was no illness, maybe I have had diabetes, but it wasn't so bad, so not so bad but I still have diabetes, because if I lose weight then all my symptoms will disappear, I have both too high cholesterol figures and diabetes, so….!"

Expanding on their understanding of health, it was apparent that even though general day to day wellbeing was considered to be somewhat an influential aspect of participants health perceptions, a diagnosis or the lack of it highly determined good or poor health. As the extract below illustrates how the participant expresses the state of health as being highly determined through an illness, by saying 'there is nothing wrong with me'. Certain 'mundane daily activities were perceived as factors which could play

a negative role in relation to health (I don't go to bed on time), yet the key determining factor of poor state of health was as mentioned above – an illness diagnosis.

> *4002, L/359-361: "…My health is good, there is nothing wrong with me, I don't smoke. But my problem is that I am not good at planning, I don't go to bed on time , I watch too much television, and only that"*

Participants were aware of knowledge on health related behaviour leading to certain conditions – however it was not considered important to change until the physical well-being i.e. body would give an indication of poor health in the form of diagnosis or feeling physically unwell. 'Feeling good and healthy' was their way of illustrating a good state of health, as they had not received a diagnosis.

> *3003, L /518-520: "I would like to keep it like that until the day my body says now you have to change your eating habits or something else concerning my health, but I feel good and healthy"*

Again, the importances of one's physical well-being through a close focus on physical functionality and ability. An indication of being 'functional' was expressed as a state of good health. These are limited to health being linked with physical health rather than the wider, more holistic modern concept of over-all well-being.

> *2004, L/6-7: "Yes, health, I think of my body. When you say health my body has to function perfectly…"*

This view was in particular much evident across migrant participants. Again, many perceptions were limited to being physically able (perceptions of physical well-being) in everyday life as can be seen below. However, the importance of having a good health was evident here as well as with participants who held holistic views of health. Expressing a perceived good state of health through expressing 'as long as you feel

well', also helps to understand that despite being overweight for example, may not encourage to change health behaviours. Furthermore, it appears that as far as one is capable of carrying out daily tasks and duties, then a sense of well-being in relation to health was achieved.

3003, L/337: "As long as you feel well... feel well physically."

2003, L/24 &43: "... Health is life, if you have good health right! Like having a healthy body…to be, like, physically healthy (well)"

3.3.1.2.2 (Un) diagnosed

When an increased focus has been laid on feeling 'physically well', the physical indicators (physically feeling well/unwell) would give an indication of good or poor health. Factors such as tiredness and increased levels of fatigue were perceived as indicators of poor health.

3001, L/20: "Health… how do I look upon health? Well I do not feel tired".

The quote below further highlights that participants felt that he was currently in a state of good health, due to them not having received a diagnosis.

1001, L/316: "Actually I had…..it appeared from the figures they had measured that it was fine"

Up until one's body instigates a negative response or receives a diagnosis, then health risk behaviours seem to not require a change. Participants expressed their way of life as 'living too well' signifying engaging in behaviours whilst being aware of the potential effects.

'Living too well' also highlights that health and well-being comes at the expense of not being able to live too well.

Some participants also expressed the result of 'living too well' as having received a diagnosis.

> *3001, L/48-50: "It's to live well.., of course you have to take care of yourself, you will have all the diseases, they'll come if you live too well, so that is a risk you must take…"*

- Physical appearance

Participants from a migrant background tended to describe their perceptions through physical 'appearance'. Appearance was perceived to be a good indicator of good or poor health.

> *4003, L/45: "Meaning of health in brief, in my mind that we shall not become bulky"*

Even though the physical appearance being an indicator of good or poor health was evident across all migrant participants, cultural differences in appearance based health perceptions were also found.

> *4003, L-/366*: "*…but in Pakistan if you don't eat too much you are not a good person.*
> *Interviewer: You are not respected?*
> *4003: Yes you are just mocked not having bulky stomach and you know."*

The influence of pre-migration cultural beliefs on people's health perceptions seems to be apparent in their present as well. Rather than a shallow understanding of the culture, these appear to be deeper-rooted cultural aspects which have an influence on participants perceptions, beliefs and thereby behaviours.

3.3.1.2.3 Religious faith – health connection

One key similarity found between all migrant participants despite the diversity in their perceptions of health perception dimension was their religious faith. Quotes to illustrate this were presented earlier.

Absent of disease perceptions - religious faith connection was expressed in relation to belief in God as an external force which 'managed' and sustained their current level of health. Absence of disease/lack of a clinical diagnosis was perceived commonly as a reward and/or blessing from God.

3.3.1.3 Self-perceived Equilibrium

A process of balancing aspects

The self-perceived equilibrium is defined as a state of being that is sustained by an unconscious attempt to negotiate the influences on health into a balance at any given point of time. This is thus an unconscious emotional and mental support mechanism which helps us maintain a sense of equilibrium in relation to our health – despite any illnesses.

Despite the multi-dimensional nature of health perceptions in the study population, participants tend to aim to acquire equilibrium, where health is one element of the wider overall well-being perspective. Independent of their health perception (whether 'holistic views' or 'absence of disease'), participants continuously strived to maintain equilibrium between the different aspects identified in their perceptions of health.

A self-perceived equilibrium here was defined as 'a process in a system where all competing components are balanced and all are accounted for'. It has been defined as equilibrium as there is a continuous unconscious attempt and aim to maintain a sense of

equilibrium. The balance achieved through a sense of equilibrium, is maintained through self-satisfaction of having balanced the identified aspects (sub-categories) as desired.

One continuously appears to 'weigh' the aspects differently, where one can give more importance to one aspect than the other. On the other hand, one aspect may influence health more than the other. This provides an insight into their self-perceived balance through their expressions. Participants reflected how they sustain their health whilst also expressing significant influences which have a direct impact on their health. The balance is maintained through a divided significance between the different aspects. This balance was acquired through a process of equilibrium. This was also influenced my internal psychological aspects (desire, needs etc.) and a self-fulfilling satisfaction was gained. In relation to health behaviour, this gives rise to an interpretation and understanding that there is an apparent reduced likelihood of 'improving' to enhance their current state of health behaviour. This is particularly evident when participants place a higher focus on aspects which do not require motivation to exercise or change diet etc.

Engaging in physical activity and adoption of a healthy diet, smoking cessation were not perceived as the only areas which were directly related to affect health. Stress coping, management of life events were also considered aspects closely related to health and management/coping of these factors (which indirectly had an impact on their health) were also considered as managing health, and thereby an investment in personal health.

Even though participants had a wider overall objective perception of health, health behaviours were considered one aspect under the health perceptions 'umbrella' - not necessarily core, of their overall health perception. A sum of these aspects provided a comprehensive understanding of participant's health perceptions which included aspects beyond health behaviours (diet, exercise)

A balance between the psychological well-being (often expressed as being achieved through spirituality) and physical well-being was enhanced by a number of migrant participants – all sharing the same religious belief system. The psychological well-being was closely related to spirituality. Spirituality was often considered to give psychological capacity and ability to deal with challenges throughout a longer life span. Participants often expressed a division of focus between spiritual health and physical health. Both considered being equally important.

> *4004, L/88-90: "… You have to think of spiritual health, l spiritual health means that you do not feel ill in your mind, you have to be healthy, also physically healthy, you must have a good body and think of both."*

A balance in life in general was often also considered to encompass health. A self-perceived equilibrium comprised of creating a balance between the demands felt by the individual participants. The need for acquiring this balance was a much higher priority than focusing on health behaviour as an independent aspect.

> *2002, L/101: "Yes, I have a job and a family, I have it all"*

Striving for equilibrium also consists of having 'the ability to achieve a sense of balance' when one is faced with certain negative life events or hardships. 'Bad things'

as highlighted below is expressed as a factor which is outside one's control. Negative events or 'bad things' had to be 'accepted' as it was often 'believed' that 'acceptance' also constituted this self-perceived equilibrium.

> *1002, L/25-29: "… -and yes, it is an interaction between all of these things, and a certain amount of bad things are bound to happen to us "*

The importance of having equilibrium was evident in as much that it was also clear that the ability to maintain a balance and overall wellbeing was an aspect of health. External factors which are perceived to have an influence on health were highlighted on many occasions. Across the migrant groups, this was often related to social aspects, family and responsibilities outside the workplace.

Physical health was linked with other factors i.e. effects of stress on physical health, effects of diet on physical health. Being positive and 'happy' was also perceived to have a direct effect on health.

> *Interviewer, L/248-253: "...how does it help your health in your day-to-day life?*
> *4004: I have mentioned that if we live our spiritual life badly, then our physical life is also bad, if I help people in need, or if I share their sorrow and happiness, then I am also happy, and my answer is that you have done something good and therefore I am happy. And if I am not happy, then my body is not healthy either, so this has an influence - our thoughts also help our body."*

Again health was associated closely with a positive state of overall well-being. This went beyond being 'physically fit'. A level of satisfaction with overall life and quality of life appeared to contribute to a good state of health.

2002, L/120: "If you are satisfied with your life, this is enough, I think. If you are satisfied, then it is easier to remain well".

3.3.2 Workplace influences on health

This section seeks to explain the underlying theoretical aspects which form the overall framework focusing on the effects of the job as a bus driver and the effects of it on well-being in an everyday context.

The workplace has been illustrated as a setting where barriers for health improvement have been identified, potential for change has been explored and the synergy between an external environment and its effect on ones 'competence' to change has been investigated. Any differences of perceived influences of the workplace will be highlighted where found.

3.3.2.1 The (workplace as a) risk environment

Figure 3.vi below demonstrates the overall relational framework and will be followed by an explanation of each, with supporting quotes from the transcripts.

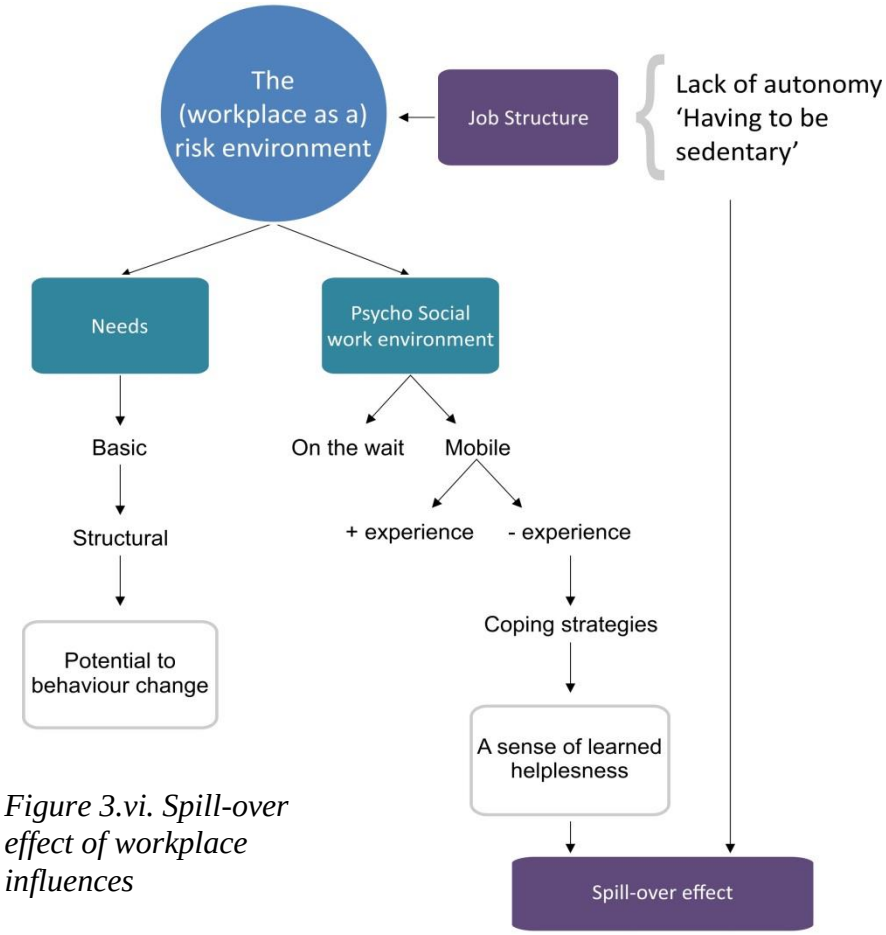


Figure 3.vi. Spill-over effect of workplace influences

The figure above *(3.vi)* takes departure from a standpoint of being sedentary. In an occupation such as that of a bus driver, where one carries out the job through having to maintain a sedentary position whilst carrying out the duty, the effect this has will be highlighted. As a starting point, there are three aspects which form the job structure of the job. Firstly, 'lack of autonomy' plays a significant role in this job. Lack of autonomy refers to the structures of the job limiting the possibility of having autonomy. Having to be sedentary demonstrates that the job structure is highly sedentary in nature (with limited opportunities to change this) as well as one needs to be in a physically static position for long hours. These together form the job structure of a bus driver.

The result of these structure results in perceptions of the workplace as being ‘damaging to health’. The prerequisites to any change in one’s personal health behaviour have therefore been portrayed as the workplaces responsibility. Due to the job structure being perceived as being damaging to health, ‘poor’ state of health was closely associated with nature of their job. Since the workplace is perceived to be responsible for the state of poor health, it is perceived that opportunity and possibility to enhance health is limited. The lack of possibility to change health behaviour is perceived as a diminished hope for opportunity for any possible change in relation to health.

Influences on health are perceived as external. Not being able to bring change on one’s health as a result of external environmental influences has increasingly resulted in lack of autonomy. Participants denote needs, which are expressed as conditions for change. Conditions which the workplace needs to address prior to participants having the opportunity to change health related behaviour. Foremost, basic needs are ‘required to be met’, followed by practical and structural changes (both external changes). These needs (if met) and conditions (if changed) are perceived to provide opportunities to re-gain empowerment and provide grounds for achieving autonomy. This, as expressed by participants will enhance and provide potential to change.

The psychosocial environment is divided into two domains. One being ‘on the wait’ and second being ‘mobile’. When bus drivers are ‘mobile’, they are providing a service. Their experiences (both positive and negative) also account for their psycho-social work environment. Due to providing a service, they experience a number of negative events

as well as positive ones. A form of learned helplessness is experienced as a result of negative events which are again associated with the nature of the job.

3.3.2.2 Job structure

3.3.2.2.1 Lack of Autonomy

Job structures appear to have vast effects on one's health behaviour, and thereby health. A job structure can either provide opportunities to enhance or hamper possibilities for changing or sustaining health behaviour. Participants have highlighted that their job structure results in poorer health, increased levels of stress, a sense of 'learned helplessness' and lack of autonomy. These also have an effect on self-perceived competence to change. These will be elaborated further through this section.
A perceived lack of control over the outcome of a situation expressed in the extract below.

> *1002, L/492-494: "It is just as if you are the last link in the food chain… we can say one thing and we can do precisely the opposite, and you cannot do anything about it. This is exactly the feeling I have got…"*

Learned helplessness is acquired when one has learnt to behave helplessly as a result of perceived absence of control over the outcome of a situation. When barriers are faced, it results in failed attempts to overcome a barrier, and eventually resulting in no attempts to overcome a barrier.

Participants in this study expressed that their current reduced state of well-being and health was a result of the effects of their job and the structure it entails. Participants felt that they were physically 'bound' by the nature of their job – expressing a form of lack

of autonomy. In addition to this, participants also expressed feelings of loneliness and boredom (see extract below):

> *1001, L/230: "...you can get lonely when sitting there you know?"*
>
> *1004, L/343-344: "... that we do not stick together because we are so scattered and we always sit alone when we work."*

Participants expressed not being able to change the negative influences at work (see extract below). This highlights the 'circumstances' and lack of autonomy at the workplace, as well as a diminished possibility for 'relaxing'.

> *1001, L/11-12: "Maybe I was thinking then it is allowed to relax a little in this job, but this was not possible."*

It further illustrates the high demands and pressure that need to be met within this job, leading to further restricted autonomy. The participants express the 'must do' nature of the demands posed in the job.

> *1002, L/270-272: "... and there are no bad excuses, there is no time for this, no, we were late, this is not ok, as this is simply not allowed within this trade"*

Participants have 'learnt' to live with certain characteristics of their work. This can create feelings of vulnerability followed by a sense of learned acceptance of helplessness. In the extract below the participant expresses how he has gotten used to the nature of the job.

> *1003, L/210-211: "I have gotten used to being alone a lot, so it does not bother me so much..:"*

Lack of influence on aspects such as not having the opportunity to plan one's work, gives rise to reduced control in the job contributing to the increasing lack of autonomy. See extract below.

> *1001, L/753-754: "… You find out at two o'clock the day before, what time your next shift will start at, which is not much time, is it?"*

Breaks during work hours were also perceived as restricted as they were not flexible in any way. Participants expressed that due to the demands of the work (bus schedules); their break entitlement often had to be compromised. This again highlights the restricted autonomy, being bound in a certain inflexible structure.

> *2001, L/266-268: " … I don't think so. I mean you have ½ hour at most and there is only time to go to the toilet, eat and skim your newspaper, and then you have to drive again…"*

Lack of understanding from their employers was perceived as neglect, and thereby enhancing likelihood of learned helplessness. It also illustrates a highly inflexible structure.

> *1001, L/759: "….if they say "this is not possible, you have to come and drive" then, yeah, you just have to come and do your shift"*

A continuous variation in schedules and irregular break times, in their everyday job gives rise to lack of regularity and consistency in their workday with respect to health behaviours. This enhances the challenges posed on maintaining a healthy diet or engaging in physical activity as a result of irregular breaks. Please see extract below

1004, L/285-287: "It is a bit more difficult, but it depends upon our working hours, which are changing, even though we drive at approximately the same time, it is not completely fixed, the breaks are not at the same time either."

Taking into account the sense of learned helplessness, lack of autonomy experienced as a result of high levels of stress as well as perceived lack of understanding from their employers, bus drivers coped through their personal coping mechanisms. Please see extract below.

1002, L/467-468: "...already ten minutes behind schedule at this point , so something has to give as you have to get on in the traffic"

Participants felt that a state of poor health i.e. overweight was a result of the job structure and its sedentary nature. Personal responsibility of one's health appeared to be somewhat diminished when accounting for the contextual environment. The lack of autonomy in the job appears to result in a 'domino effect' where a reduced perceived control over one's health is experienced. The helpless nature of the job, not only directly, but indirectly as well as negatively influences their health. Not being able to or having the opportunity to improve health leading to a sense of learned helplessness is experienced by participants. The participants below express the sedentary nature of the job resulting in their negative health outcome.

4003, L/100-101: " ...because it is a job where you are sitting and you become bulky"

3001, L/13-15: "... I have been a bus driver since 1998. During these years I have gained 20 – 25 kg the first 2 years I gained 20 kilos."

A negative 'outcome' (poor state of health) of this type of 'sedentary' job is expressed in the extract below. It also illustrates that poor health was a result of their job and

increased lack of autonomy. It appears as participants had already anticipated a decline in health when entering this job. In addition to that, acknowledging that 'being a bus driver is not very healthy' as the participant below mentions, there is an acceptance of the effects the job has when entering this type of job.

> *2001, L/311-312: "So actually being a bus driver is not very healthy, it is obvious that you do not move, and mostly just sit. And this is not so good."*

Again the effects of lack of control and autonomy in their job somehow spread its influence to reduced control in relation to health related behaviours. The participants below highlight an external source (irregularity) as a barrier to change health behaviour.

> *1004, L/289: "Yes, regularity with the diet is a little bit more difficult…"*
>
> *1004, L/172-174: "… so there are some small barriers, but it is probably due to my working hours that I can't be consistent with that sort of thing..."*

Poor control over health behaviours appeared to be a result of a domino effect due to reduced control in job. Lack of control in the job, spreads to poor control over health behaviours as mentioned above.

In relation to health behaviour a form of disempowerment was expressed by participants. In the extract below, the participant expresses lack of competence in relation to his physical activity behaviour – similar to having no control over a situation, he expressed poor control over his health behaviour i.e. exercise.

> *2004, L/113-114: "…there's diabetes there's cholesterol, we've got it all. Due to exercise, we don't do any exercise."*

As well as poor control of health behaviours, participants also expressed high levels of stress. Over eating (poor control over diet behaviour) was expressed by many as a form of stress coping mechanism.

> *2001, L/131-132: "Even at the time where I was mentally strong, but physically.., as I say l, if I am stressed I eat a lot".*

Poor control in diet behaviour was as an implicit form of learned helplessness. Participant below acknowledges that despite being aware, he is engaging in overeating. High levels of stress can demotivate individuals to engage in health related activities. In addition to this, poor control of diet is expressed and appears to be a coping mechanism.

> *4002, L/93-101: "…and if you feel stressed, I eat a lot, if I do not feel well without a reason, I just eat, and I have experienced this a lot of times.*
> *Interviewer: that you do like that?*
> *4002: Yes*
> *Interviewer: Are you doing this consciously?*
> *4002: Yes, yes*
> *Interviewer: Do you think this is healthy?*
> *4002: No it is not"*

3.3.2.2.2 'Having to be' sedentary

Participants also highlighted that not being able to move for a prolonged period of time as a contributory factor to their poor health. Again, personal responsibility and 'blame' is projected towards the job where there is reduced control already.

Participants expressed an increased number of barriers to improve their health. The job type itself was seen as a barrier to improving health:

> *2001, L/304-305: "Something which makes it more difficult to be healthy is our workplace or our work, which actually gives us problems."*

Participants showed increased lack of control over their health and portrayed their state of health as being the workplace's responsibility. There is apparent awareness of the negative effects on health due to having to 'sit down all day' as can be seen in the extract below.

> *2001, L/71: "… it is because we sit down all day…"*

In addition to the perceived poor state of health (overweight etc.), participant also expressed experiencing physical symptoms i.e. pain as indicators of poor health. This was also perceived to be a result of the job type, in which they are helpless, non-autonomous and have no control.

> *2001, L/68-69: "… our workplace, as bus drivers we sit down all the time and most of us have pain in our backs..."*

3.3.2.3 Needs

Due to the lack of autonomy and reduced control, participants expressed 'needs' which could be addressed by the workplace. Once needs had been addressed, these would allow for opportunity for participants to improve health. These needs appear to be conditions for behaviour change (participants are 'setting' conditions for change). It also illustrates, the sense of helplessness experienced as the 'conditions' set are requirements which need to be met, prior to behaviour change can take place. These 'needs' have been categorised into basic and structural aspects. The basic needs rest on practical possibilities – which can give opportunity to 'potential for change' addressed by participants.

In order to enhance possibility for behaviour change, 'a tailored' approach or a 'supportive environment' is often suggested. The following section will address the needs for change (from external environment i.e. workplace) so the potential to change health related behaviour was possible.

3.3.2.3.1 Basic & Structural

As mentioned above, the result of experiencing a sense of learned helplessness, the responsibility for change to occur is shifted and projected from oneself to the workplace. Due to participants perceiving a lack of control in their job, it is apparent that in order for change to take place, participants 'require' certain 'basic' needs met. Having met the needs appear to be the core, prior to them being able to engage in health behaviour change i.e. healthier diet intake, engage in physical activity.

Without any sense of perceived autonomy, it is unlikely that any change in health behaviour can occur. Autonomy can only be gained through the workplace, and not from themselves as highlighted by participants. The structures which are hampering their needs, even at basic level, are perceived not to be supportive towards any change. Please see extract below highlighting a compromise between the high demands and 'basic needs'.

> *4004, L/590: "… I have 15 minutes' break, 5 minutes, come and go and finish. If you need to go to the toilet, then there is no time left to eat"*

Improved working conditions were also portrayed as a need which needed to be met prior to participants perceived as being able to engage in any change. Unless changes were made in the work environment (so their 'basic needs' were met), behaviour change

was not possible. Please see extract below for an insight into what participants characterised as fundamental needs at the workplace.

> *1003, L/459-460: "….the cold busses …they are too warm during summertime, the seats, the smoke, passengers drinking wine, I think it is grotesque…"*

- *Structural & practical:*

If structural changes were implemented at the workplace, then participants are likely to see this as an opportunity to re-gain control. Lack of control diminishes possibility of personal responsibility and potential for empowerment.

A hope that the external environment (workplace) will 'provide' opportunity for change is expressed. A possible reasoning behind this could be that perceived sense of 'control' is 'taken away' through this work, and the regaining of control is therefore also expected to come from the external environment (workplace). This would allow participants to become empowered autonomous employees. The participant (extract below) expresses a need for an opportunity in order to be able to make change.

> *2001, L/111-112: "…When you think logically, I mean most of the modern workplaces have a fitness-centre, so it wouldn't be a big deal if there were facilities …"*

The workplace's attempt to encourage healthy eating and physical activity were not perceived as entirely genuine and were considered to be ineffective.

> *1001, L/238-240: "… they don't do anything. They make some posters and newspaper front pages or whatever, but then nothing more happens…"*

Again, participants expressed a lack of faith in their employer's intention of employee well – being resulting from previous experiences.

> *1003, L/511-512: "… they don't put up any notices really. At the moment there is a campaign, "Ride your bike to work", but this campaign does not belong to AXXX, its someone completely different from outside doing this"*

Again, external changes were suggested in order to provide grounds for change for participants to 'be able to' change. Another form of setting conditions for change (please see extract below).

> *3002, L/506-507: "Yeah, tell them and inform them of what is healthy... they should have a health policy like that"*

The need for a canteen was expressed by many. However, from a practical point of view this is not considered feasible. A shared wish to re-gain autonomy through expressing needs such as those below.

> *1003, L/452-453: "Yes, but I am not the first one to say it, a lot of the employees would really like a canteen"*

There are implications which suggest that there is potential to change behaviour, but on conditions which need to be met prior to this can be possible.

In the extract below, the participant acknowledges that a change is required, yet uncertain what it could be. A lack of clarity is portrayed. Likely to result from sense of helplessness, and hopelessness.

> *1001, L/245: "….Something else is needed"*

3.3.2.4 Spill over effect

As a result of learned helplessness in their job, a reduced level of competency to bring certain change in their health behaviour was clear. The analysis illustrated that participants experiencing poor control in work life, also experience poor control in their

in relation to their health behaviours. In addition to this, poor control over situations and environmental stressors lead to poor control over the effects as well. The lack of control experienced in one setting therefore, has a spill over effect in another setting. For example, a sedentary and a 'helpless' nature of job spills over to a sedentary behaviour, with a lack of competence to change aspects outside work.

> *2004, L/87-92: "… We go by bus directly to our work and we have cars. And I am used to it, I almost cannot walk now if I don't change my habits and as a bus driver we sit 8 or 7 hours in a row, then you get out of the bus, go home by car, eat and sit in the couch to watch television and then you sleep...see the combination there."*

Participants are 'bound' in a routine. Being bound here reflects their inability to make changes, even outside work. Similarly how they are bound in the structures of their work, they are bound in a routine outside work, illustrating a spill-over effect and an inability to get out of it. Daily routine, dietary patterns and sleeping behaviour follow on from each other. Please see extract below.

> *4001, L/17-23: " I don't try new things. It's not my life - back and forth, back and forth, that's our life at work.*
> *Interviewer: back and forth, where?*
> *4001: Work, work, in the night we finish our work early and then we just go home and eat and are back at work again next morning."*

A sense of learned helplessness experienced in their job spills over where a sense of learned helplessness in relation to their health behaviours is experienced. Again, they perceive themselves to be in a position of not having the opportunity to change health related behaviour.

4002, L/110-113: "Well, I think when we get home after work before we fall asleep, we eat food and fall asleep after a couple of hours, we don't go out. We usually eat dinner late; this is very dangerous I think."

3.3.2.4 Psycho-social work environment

To define the boundaries of psycho-social work environment', there is a need to account for the service provided to passengers. This also contributes to the psycho-social work environment for bus drivers. As providing a service to passengers constitute a central part of the bus drivers daily work, it adds to the gaining insight into the psycho-social work environment.

There are two aspects to the psycho-social work environment in this occupation. One being when individuals are mobile, providing a service to the general public and the other defining characteristics such as relationships with colleagues, and management etc. These two dimensions (on the wait, mobile) of the psycho-social work environment were illustrated in the analysis.

There was only one particular difference between the experiences between the different migrant participants and the Danish participants. This was incidents of discrimination and racism during work hours. Psychosocial work environment is a challenging aspect in this type of job, as it is relatively unclear where to intervene. Positive and negative experiences which have a significant influence on their health will be highlighted.

Positive experiences

Positive experiences were commonly associated with fellow colleagues and customers for providing a good level of service. A sense of appreciation was expressed by participants highlighting the positive aspects of the job. There were no differences

found between the Danish and migrant interviews in relation to the positive experiences highlighted. Positive experiences during their work were a result of perceived sense of appreciation.

> *1001, L/881-882: "This is why I continue. I have experienced that my passengers say "thanks for the ride, it was lovely" or they are waving at me"*

Positive and supportive relationship with fellow colleagues – particularly in times of conflict and other negative experiences were highlighted as a positive element.

> *3004, L/488-493: "Regarding supply trips, all busses have their own departure, let's assume that a bus departs 12 o'clock and has not left because I was delayed as i was asked to take a break, this bus is risking to get a fine of 3000 DKK by AXXX because it has not had its ride, so this also has to be considered, 3000 DKK is a lot of money and 10 busses which are not driving means DKK 30.000 a day, 30.000 multiplied by 30 days are 1 million, it is a lot of money, in our business we show consideration to each other."*

A sense of familiarity and positive relationships with colleagues in a large workplace such as the one in this study was also seen as a positive aspect of the workplace. Commonly this was a result of participants being employed in this job on a long term basis.

> *2001, L/279: "We all get on well together, here in "Svanemøllen at least"*

Even though a few migrant participants expressed negative experience of racial discrimination, a number of participants highlighted positive relations with their fellow colleagues.

> *3002, L/220-221: "Yes we talk to each other and help each other. It doesn't matter whether we are immigrants or Danes; it is a very nice environment."*

The above mentioned elements of positive aspects experienced at their workplace constitute towards a well-balanced psycho-social work environment. The positive experiences enhanced participants 'happiness at work'. Many highlighted these as core positive aspects in relation to their job.

Negative experiences

Being subjected to certain events, (where participants felt unfairly treated by the 'general public'/service providers (police)) enhanced feelings of helplessness. This contributed towards inability to gain control. Majority of participants expressed feeling vulnerable to mistreatment. A lot of participants expressed feeling helpless as a result of negative experiences when they were driving a bus. This lead to feelings of frustration, exhaustion etc. The feelings in addition to feeling helpless seemed to lead to overburden ones capacity and were associated with feelings of fatigue and tiredness. This was also due to the long hours spent behind the wheel. Many have accepted these conditions and perceived them as 'this is how it is', and found it difficult to see room for improvement. The extracts below illustrate the 'vulnerability' bus drivers are exposed to.

3002, L/268-271: "... of course there are some, smokers for example, they are standing outside the bus smoking and when you have to open the doors they sometimes enter the bus and blow out the smoke just into your face, yuk!"

3004, L/419-423: "But when you are in a situation like that, to be spat on, so they ruin your life for a couple of months. If you experience an angry passenger in your bus who is giving you abuse or doing something stupid then your day is ruined. I really hope that our employer is aware of the fact that such problems may arise. Our working day is ruined when things like that happen."

The migrant participants expressed being vulnerable and subjected to racial discrimination during work hours.

> *2002, L/114-115: "Yes, there are a lot of passengers who call us bastards or black bastards, and when I think about it, I then get angry."*

High levels of stress are often experienced in this type of job. The level of stress was expressed as an outcome due to experiencing a number of factors outside ones control. Participants became helpless and stressed when increasing demands of the job could not be met.

> *4004, L/585-590: "Yes it also helps, because when we're done with driving the bus we've got loads of stress. From one bus stop to the next from 7:30 AM, where we have to get a lot of passengers into the bus, shut the doors and drive on. And it is not so easy and a lot of times it gets too late, and at the next bus stop Mrs. Jensen is getting even more angry,' why are you already late' she, or he, says when you are late and then you get more angry because we are already late, so in that way we get stressed, it's destructive, so we have loads of stress."*

The following quote further highlights aspects being vulnerable enhancing the likelihood of becoming helpless and hopeless.

> *3004, L/427: "…but you know the passengers are allowed to say anything to us, and that ruins our day."*

The negative experiences highlighted above constitute a form of learned helplessness i.e. not being able to bring change and being subjected to negative experiences (outside ones control) where a service is being provided. A service which needs to maintain a

certain level of quality, positive customer service approach and at the same time being subjected to negative elements highlighted above.

3.3.3 Health behaviour and the potential to change

This section seeks to explain a framework focusing on the psychological processes in an everyday context with respect to physical activity and diet behaviour. The 'potential for change' signifies the potential we have within ourselves.

Migrants displayed a stronger need for 'adjusting' their preferred diet, so it was perceived healthy.

The diversities in relation to potential to change were different amongst migrant participants and Danish participants. This was predominantly due to the diversity in their health perceptions and the barriers they faced. Any clear differences between the migrant and Danish participants will be highlighted where found.

The framework (please see figure 3.vii) takes departure from the psychological processes that are at play in an everyday context. The figure illustrates participants' responses in relation to health behaviour with psychological factors playing a key role in an everyday context. It further illustrates how 'health behaviour and potential to change', and its sub categories are linked to the adaptation framework (Please see figure 3.iv for adaptation model). The adaptation framework illustrates participants attempt to maintain balance in an everyday context. During this attempt, it has been aimed to highlight the conflicts, challenges and other key aspects which interfere with ones

'sense of balance' and psychological factors which are present. Ultimately, the key aim is to maintain a psychological balance.

The figure below *(3vii)* should to be understood as a sequence of processes within our everyday context. We are all part of our daily structure (consisting of daily plans and duties, activities). Despite being surrounded by our daily structures we attempt to maintain certain health behaviours, which are an integrated part of our everyday. The constructs presented in the framework as well as the processes will be presented in this section. The processes will be demonstrated through quotes. Health behaviours are the core of the framework, whilst highlighting the influences, psychological conflicts which arise due to the internal factors as well as the external contextual environment.

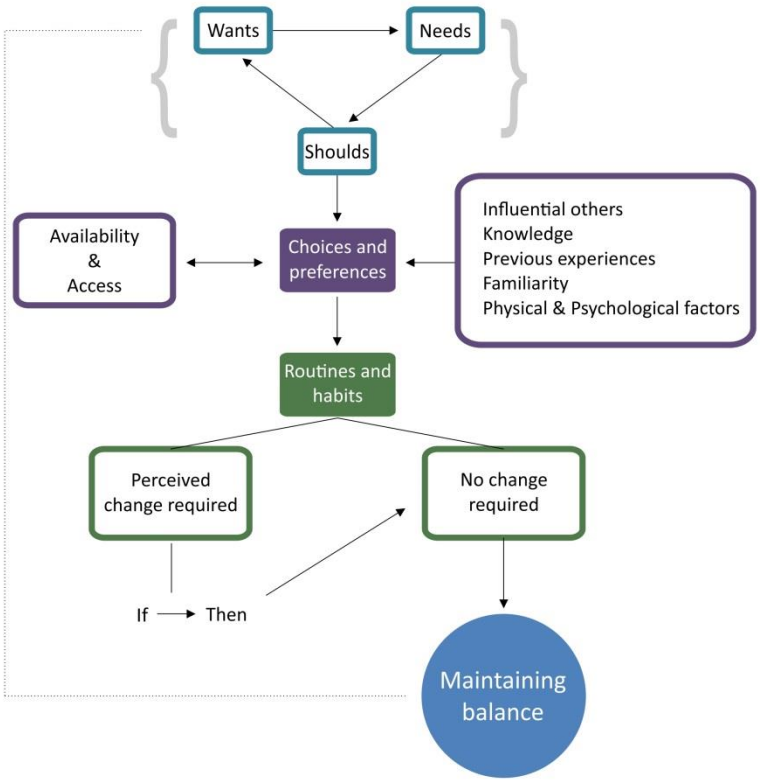


Figure 3 vii. Health behaviour and potential for change

3.3.3.1 Day structure

As a starting point, context needs to be taken into account. It is within a set context that participants then take decisions, act, live and participate. The occupation (bus driver) brings with it (like most jobs of such nature) certain conditions, which can be perceived as barriers.

In a context where a structure of their work day is perceived as barrier, brings with it many challenges to change health behaviour. Engaging in physical activity was often perceived as an option which was not available as bus driver's work-day structure did not support this.

From the following quotes, the work-day structure is viewed as a barrier to engage in physical activity and having a regular, healthy diet

> *3001, L/298-302: "Yes, it is a little difficult and it was during the morning at 9 o'clock… but I could not cope with the work and it's a little bit difficult because I work early in the morning."*

A combination of their day structure (outside work) as well as work structure was seen as barriers to engage in physical activity. The overall day structure was perceived as not allowing for participating in any form of 'healthy' activity e.g. physical activity.

For a few participants, who already had some form of physical activity 'integrated' in their daily structure, the work structure was not seen as a barrier– see quote below.

> *3003, L/125-129: "…but then they changed the schedule, which means I now have to go to work in the evening, and when I have a day off, like today for example, ,then I take self-defence lessons at Rungsted School each Tuesday and Thursday, so in that way I also get exercise."*

Participants who did not engage in physical activity perceived their day structure to highly influence their health behaviour. Participants who were already taking part in some form of physical activity structured their day accordingly. Wanting to engage in certain health behaviours was also a result of what is also an integrated part of one's every day. See extract below.

> *1003, L/159-161: "Actually I am very fond of sport, which has always been a part of my life s, a completely natural part being able to exercise."*

3.3.3.2 Intrinsic desires

The role of the intrinsic desires revolves around motivation. Beyond an overall level of motivation to live a healthy life, the analysis suggested a sub level of motivation which revolves around motivation to change certain behaviour. The 'wants and needs' and 'should's' reflect this sub level of motivation. Participant's motivation to engage in certain health behaviour should be perceived as a compromise between 'wants & needs' as well as 'should's'.

'Wants and needs' are intrinsic desires, described as desires for inherent pleasure. When engaging in activities/behaviour to satisfy or to gain an inner pleasure. The intrinsic need to maintain a sense of psychological balance is also a motivating factor for an increased need to fulfil an intrinsic desire. The 'wants and needs' should be understood as 'desires from within, which are always 'fighting' to be fulfilled, regardless of situation or intention to change. Should's as expressed in lay terms – are form of intentions and aims which are inflicted upon an individual's moral values as an outcome of their ideal self.

The should's and the 'wants and needs' are factors which come into conflict as they can have opposing interests. Whilst an individual strives to fulfil intrinsic desire for 'wants and needs and a compromise made between the 'should's results in (a) adaptation (b) engaging in particular behaviour.

3.3.3.2.1 Should's

The 'should's' demonstrate the 'ideal way'. These are also 'ways' that the participants expressed in a form of a wish to engage in potential change to improve health.
His need for spiritual well-being is interlinked with how one 'should' balance a healthy life.

> *4004, L/95-98: "No. You have to organise both parts. Yes, what affects one's body, if you for instance have a bad way of thinking or if you have had a bad day, it has a huge influence on your body, if we do not balance both parts, then we ruin our body, so we have to balance."*

Participants expressed a number of 'should's'. Not all of these reflected intentions to change, but some highlighted a need to change their behaviour more implicitly than others. These were implications, which participants expressed for being healthy. These were not entirely insights into their own behaviour. They were closely linked to participant's practical ideas which are interlinked to their ideal health perceptions. Participants attempts in the 'right direction', thus signifying personal attempts to become healthier. Participants are aware of behaviours which they 'should' engage in.

> *1001, L/300-302: "I don't smoke cigarettes any more, I smoke a pipe. It doesn't make it better, but anyway it is a step in the right direction (laugh), I think."*

Participants expressed the aspects of 'should's' as general health advice. However these were not necessarily a reflective insight into personal health behaviours.

> *3001, L/226-227: "Yes…..food. It holds importance, healthier food, but if this is not enough then you also have to get exercise and go for a walk after dinner."*

And in relation to physical activity, the 'should's' were also reflected as ideal way to improve health within their everyday context.

> *3004, L/218-219: "There is always room for improvement, nothing is better than exercise, as exercise is very important for all of us"*
>
> *1004, L/164-165: "Yes. Maybe weight training, which I think is very healthy, and that I have never tried."*

The 'should's' are also interpreted as the participants 'common rationale' in their understanding of a healthy life. The way health behaviours 'should' be carried out, does not account for barriers which are expressed earlier e.g. day structures. The ideal way i.e. the way it should be, is viewed as an ideal way of engaging in physical activity or improving diet.

3.3.3.2.2 Wants and needs

Wants and needs were expressed as uncontrollable aspects of the inner desires. These are features, where an individual disregards the outcome of a particular behaviour. This is done in order to satisfy 'wants and needs'.

Participants expressed 'giving in to' their wants and needs, particularly in relation to diet. This appeared to be a stronger force compared to the 'should's'.

The intrinsic desires were highlighted through participants 'wants and needs', which can be seen from the extracts below. In relation to diet, participants expressed over-indulgence in relation to diet. This also highlights them conforming to 'inner desires' (wants and needs). Conforming to inner desires was associated with immediate pleasure gained.

> *3001,L/338-339: "When you go there, it tastes very different, I have to admit, this does not keep me back, if I feel like it…"*
>
> *4001, L/16-17: "no, I never make any balance as long as it tastes good…"*

Wants and needs were usually expressed as notions which were 'outside' ones rational control, often fluctuated through differing levels of motivation. For example, the participant below expresses his 'conforming' to inner desires (stomach chooses), when highlighting 'what' he would like to eat during work hours

> *L/186-187: "Interviewer: What would you like to eat at work, if you were able to choose?*
> *2002: I don't choose, my stomach chooses"*

Similarly in relation to physical activity, outcome was often satisfying the 'wants and needs':

> *1002, L/55: "… you know...when I have not felt like running."*

The notion of intrinsic desires in relation to physical activity and diet have been highlighted to illustrate how participants engage in certain dietary choices (unhealthy) – despite wanting to and aiming to maintain (*should's*) a healthy lifestyle. Despite the long term plans and intentions of wanting to have a healthy life, the analysis suggests a conflict between the long term aims and intentions and immediate behaviour.

3.3.3.3 Choices & preferences

Participants' preferences appear to be highly influenced by their intrinsic desires. The preferences were formed through five aspects. These have been listed as (1) Influential others (2) psychological and physical factors, (3) familiarity, (4) Previous experiences (5) health related knowledge.

However preferences and choices (in relation to diet choice and opportunity for physical activity) were also dependant on availability and access.

3.3.3.3.1 Influential others

Influential others played a significant role in migrant participants' preferences in relation to dietary choices and type of physical activity. This was not very evident from the interviews with the Danish participants.

> *4003, L/176-177: " …but actually we had a school teacher in charge of our cricket, they would tell us not to become overweight as you will not be able to perform right…"*
>
> *4002, L/145-146: "… Then I think of what he said, because he always said we must not have a large stomach because it is dangerous."*

Preferences were not necessarily viewed as healthy choices. For example, participants expressed preferring certain dietary choices, whilst being aware of the high fat intake. However, ultimate choices were dependant on preferences more often than not. It was often highlighted that being 'healthy' is seen as an addition to the 'preferred diet'.

> *2001, L/134-135: "Generally I think that of course you have some food habits that you usually eat, then you can add what you think is healthy."*

3.3.3.3.2 Physical and psychological

Physical and psychological factors appear to directly influence certain preferences. A closer insight into the physical and cognitive factors influencing preferences was not clear from any interviews.

> *2003, L/187-189: "… but at the time when I came to Denmark, if I do not eat rice or pasta, then I feel that I have not eaten anything, if I eat bread or open sandwiches I feel that I have not eaten"*

3.3.3.3.3 Familiarity

The role of familiarity (in relation to dietary choices type of physical activity) was also more apparent in interviews with migrant participants.

Preferred diet appears to be a result of familiarity, amongst other factors.

> *2002, L/193-195: " I do not like a lot of different food, do you understand me?*
> *Interviewer: Yes, yes*
> *Interviewee: I think Somalian."*
>
> *3003, L/515-516: "But of course this is typical for immigrants in Denmark, I am I prefer our own food"*

It was apparent that migrant participants preferred a certain type of diet (national food), and also perceived it to be somewhat unhealthy comparatively. As mentioned earlier, migrant participants expressed the need to 'adjust' their preferred diet, so it was healthier. On the contrary Danish participants highlighted avoiding this, and in addition perceived their diet as healthy, as well as tasty.

1003, L/323-325: " I deliberately avoid the food containing fat, and that sort of food, it is mostly traditional Danish dishes with vegetables, meatballs, Danish beef, sausages and fish, as much as possible."

1002, L/39-40: "… as I like to eat, which I think taste delicious, it is also the things which are healthy."

3.3.3.3.4 Previous experiences

Majority of the participants expressed a good state of health during their youth. This was particularly apparent in interviews with migrant participants, who expressed a better and a good state of health prior to migrating to Denmark. Their early experiences have formed their preferences in relation to dietary choices and type of physical activity.

4002, L/27-31: "I have played cricket and hockey in school and college, I have played cricket…
Interviewer: Are you still doing it here?
4002: No, not so much anymore, only in the yard together with my children. But I established a real club 4-5 years ago; I played in Nørrebro Cricket Club approx. 6-7 years."

3.3.3.3.5 Knowledge

Danish participants appeared to perceive themselves as well informed in relation to health and expressed increased belief in their health-related knowledge. This was not very evident in interviews with migrant participants.

1001, L/898: "We are a pretty well informed population"

Migrant participants expressed lack of general health–related knowledge and advice. An expression of a healthy diet was often limited to refraining from certain foods.

3001, L/208-212: " What is healthy, I actually do not know so much, of course I know the food which contains a lot of fat and less fat and sugar and salt. Too much salt is unhealthy, so keep away from this. Eat healthy, I never eat breakfast, and that is a bad habit, maybe I have 3 meals a day."

L/206-208: "Interviewer: If we should focus on food. What would you eat? "3001: Yes, but actually I do not know what to eat, if I have to be healthier."

Interviewer, L/369-370: "Would you say that the food you eat is healthy? 3002: I don't know."

Factors highlighted above appear to have a direct influence on preferences and tend to form preferences based on a combination of the factors highlighted. Some factors identified tend to reinforce individuals preferences.

Preferences are also influenced by intrinsic desires, as well as the factors highlighted above. The participant is referring to his preferred choice of food, illustrating a need for 'adjustment' in order to make it 'healthier'.

Interviewer, L/451-453: "Is that healthy food too?
4002: Yes, it is healthy. Sometimes you can eat less if you use too much sugar."

Simplicity would reinforce certain preferences. The preferences develop into choices. Choices are made when several options are available. It is apparent, how certain preferences are developed into choices. See extract below.

2004, L/198-199: "We like fast food, rice and pasta, they are prepared relatively quick and that's how Somalis like it..."

1001, L/448: "...I like it as simple as possible"

Preferences in relation to diet can also be seen below. Migrant participants having a certain religious belief also expressed their confinement with any regulations.

4001, L/23-27: "I do not eat anything which is like traditionally real Danish food.
Interviewer: No, you don't?
4001: Once in a while I make a grilled chicken and eat it, but I am a little more careful
Interviewer: You are careful?
4001: Because I don't eat non-halal food."

The above mentioned aspects have been found to play a key role in choices and preferences. The influence of these aspects on diet was more apparent compared to their influence on physical activity. There is a need to understand the above in a context of factors illustrated in figure 3.vii.

3.3.3.3.5 Availability & access

Availability and access to opportunities for physical activity and dietary choices appear to have a direct impact on preferences and their choices.

2002, L/45-46: "without fibre and without bread, the first time I saw rye bread was in Denmark, I don't like rye bread, but I like the brown bread."

Preference seems to highly influence choice, and therefore has a direct impact on behaviour.

These aspects were much more evident in the migrant participants compared to the Danish participants. There was a clear difference between preferences amongst migrant and Danish participants.

The choices along with preferences appear to form participant's routines and habits. Routines (behaviour carried out within a given context) and habits (repeated behaviour) was seen as a result/outcome of the choices.

3.3.3.4 Routines and habitual patterns

Routines and habits consisted of certain 'health practices' in an everyday context. These were habits and practices which were participants' way of living whilst integrating a health aspect into their lives, forming their health behaviours. It is important to note the environmental context and its limitations and opportunities which either provide opportunity or hamper the possibility for an individual to carry out their 'routines'.

> *3002, L/113-114: "Food, exercise, cycling and walking, I don't drive so much in my car; I go by bike or walk. I walk around to exercise and do some exercises every day."*

Participants had certain beliefs about their practices and perceived health benefits as a result of these practices. These practices and routines are a way of living a healthy lifestyle, and maintaining a sense of balance. Within the structures of the day, and the context they live in, participants set certain routines and habits which they aim to find a balance in.

> *3003, L/54-58: "… then I wake up automatically at 6 o'clock to jog, such days I am very busy, then I run 3 laps of a playing-field, that is what I do, afterwards I take a shower and then I am fit when I have a cup of tea with ginger, it is very important that you take ginger, as it cleans the body, it does."*

Practices appeared to be a result of a perceived immediate positive outcome. Habits were formed when participants experienced immediate outcomes i.e. personal gain/satisfaction. The analysis illustrates how routines and habits form health behaviours with immediate outcomes. Experiencing immediate positive outcomes seemed to encourage uptake of health promoting behaviours.

> *1002, L/437-438: "...and then I bike 10 kilometres and then am certainly awake..."*

In an everyday context, where a number of habits are intertwined together, where one impacts the other and vice versa, a set of collection of these habits eventually make up an overall diet behaviour pattern. In the extract below, a habit is a result of several factors.

> *4003, L/97: "...and i have the habit not to eat during the time on the job"*

Despite any circumstances people try and create a balance in their mind through an unconscious make up of routines and habits.

A routine embedded in everyday life. Despite the external influences, the participants engage in what he wants, and follows the routines that are embedded in his everyday life.

4001, L-35-37: "...I travel with the bus a few stops and then I walk to my home for the rest of the journey. Those are my principles. It is like people who take the stairs all the time etc...for me, this is my exercise."

4001, L/49-51: "I don't care if the weather is good or bad. I put on my cap and jacket and then I walk.
Interviewer: So you just have to walk each day.
4001: Yes, this is my routine."

An understanding of the routines and habits of participants' everyday provides an insight into the various factors which play a role in the formation of health behaviour. The analysis also suggests the processes of factors (psychological, social and environmental) which influence diet and physical activity in an everyday. Health behaviour needs to be understood in the light of everyday context – where several factors play a role in maintaining a certain activity or changing it.

3.3.3.4.1 Perceived change is required & No change required

Once perceived need for change is recognised – it was found that many participants set 'condition for change' a certain change. Participants often implied an 'if – then' condition for change. It is defined as a process where they assess the outcome of certain behaviour, and apply accordingly. This could possibly be due to their learned helplessness having an effect on their personal competence to carry out the change.
In the extract below, participant expresses an 'if-then' scenario. Due to lack of time to take part in physical activity, he has reduced his intake of food ('if' I reduce my fat intake then I won't be overweight.

> *4003, L/200: "I try to have a concept like that….don't eat too much you will become bulky."*

And the same accounts for the participant below, where he is compromising on ones behaviour for the purpose of a positive outcome. In order to compensate for not exercising, he avoids excess food, in order to avoid a negative outcome (overweight) and wants to sustain current weight (positive outcome).

> *4004, L/176-182: "On the other hand, if you are not exercising then you have to watch your stomach, avoid fat and too much food, otherwise I'll get fat."*

When immediate negative effects of any activity are not experienced, the likelihood of perceiving this as 'unhealthy' is low. Most often living through fulfilling intrinsic desires, up until a need to change certain behaviour is identified.

When a need to change is identified, the likelihood of making the change is higher (see quote below).

> *2003, L/74-77: " Different food, a lot of times I don't eat healthy food, I eat rice, pasta, spaghetti and meat and then I easily gain weight, then I stop eating, only a little fruit, salad and rye bread and drink water 4 times a day. So when I don't eat and when I drink water, I lose weight, but I do not follow a plan, I just do it like this."*

Participant's inner desires are affected by the contextual factors. Participants continuously aim to 'adjust' as their primary aim is to fulfil their inner desires, which are apparent in their 'choices and preferences'. These then appear to lead to habits and routines forming a pattern of health behaviours. Below is an example of how the immediate environment plays a role in participant's health behaviour patterns.

> *1003, L/367-368: "Yes, sometimes I get a long break in Svanemøllen, where I buy 3 pieces of fruit, so that's it."*

With migrant participants, it was apparent that their 'cultural context' played a significant role.

And contextual factors were closely associated with deeply rooted aspects of their cultural background.

> *2004, L/50-52: "I don't eat healthily, it is our culture and we are like that, the food we eat is rice and pasta and there's no fibre in it…"*

The potential for change in behaviour lies in the perceived need for change as highlighted above. The perceived need is often identified when the outcome of certain routines and habits is not as expected.

3.3.4 Adaptation

The maintenance of a psychological balance was a core theme running throughout the interviews. A need to maintain balance was apparent and important. Balance was achieved through 'adjusting' and maintaining a psychological sense of control. The analysis suggest participants' aim to maintain a sense of balance which is a compromise between the external demands, and an inner effort to maintain and fulfil needs – this can be understand as balance in subjective terms. Whilst adaptation efforts were usually focused on prioritising what they felt was most important, as well as factors which hold higher level of importance. A lack of maintenance of these priorities appeared to result in imbalance.

Participant's continuous attempt to maintain balance between their psychological, physical well-being and overall life can be understood through some of the selected quotes below.

The participant below highlights his efforts through which he aims to reach satisfaction and balance. These can be linked to individuals' continuous aims to preserve equilibrium between the different aspects which provide reward and balance (see figure 3.iv)

> *4001, L/587-592: "…but now it is my own responsibility, because now it is about my family and my children, I have to take care of my children and they go to a private school, so therefore I have to stay here, and my wife was here in 1996, she said, I don't like this cold weather, I said ok and then she left Denmark. I stay and now it is a quiet life with no problems. I do not have a wife to quarrel with like others. I go to work and take care of my home, in the evening, just go for a walk."*

Maintenance of balance was achieved through daily attempts to meet demands, and efforts to work through barriers experienced, to achieve balance. Below is a participant (3004) who has received a diabetes diagnosis, also in an effort to maintain balance. For him, psychological balance appears to originate from engaging in certain behaviours which provide positive outcomes. For participant 2001 a sense of balance is achieved through engaging in activities which positively influence his ability to work.

3004, L/10-12: "… I got diabetes. I am aware of what I eat now; I do not eat sugar and fat. I exercise every day, I walk for 1 – 1 ½ hour, up to 2 hours each day…"

2001, L/72-73: "... so in that way I am always trying to get exercise, as long as you get exercise and of course look after your back then we can keep our work or…"

3.3.4.1 Role of Rationalisation

The role of rationalisation entailed justification of engaging in certain behaviour or not engaging in an activity which has benefits i.e. exercise. It was seen that participants psychologically rationalise their behaviour as a form of balance achieving mechanism. The extracts selected will highlight how participants provide a self-affirming rationale into their behaviour.

For example, the participant below rationalises his lack of physical activity. Rationalising current (unhealthy) behaviour appears as a form of self-affirming justification.

2003, L/102-103: "… I think you use a lot of energy, you look, open and shut doors, so you use much more energy than you think…"

Again, the participant (4001) rationalising his lack of exercise as not having the opportunity to engage in physical activity.

Interviewer, L/203-205: "Would you like to do even more or are you satisfied with what you do?
4001: Why should I do more? I don't have the time. I have to go to work every day. In the old days workplaces were nearer to your home, but now it takes me 45 minutes to go to my workplace. That's a long trip."

Rationalisation was also a process as a result of the barriers experienced. Participants expressed certain barriers they faced. These barriers were similar across the migrant and Danish participants on many aspects and differed on fewer aspects.

Financial resources were a key barrier highlighted through the transcripts:

2002, L/213-214: " Yes, it gets expensive with fruit etc. ...but we buy everything for my children...that's just how it is…, we eat fruit, rice and meat."

1001, L/407-408: "…But unfortunately I cannot afford it in my budget, so I have to eat this".

Lack of time was another barrier experienced by most participants:

2002, L/42-43: " Because I don't have time, I work until late, and when I get home at 14 o'clock I'm a little tired and go and get my children in school, so…"

Physical limitations i.e. being overweight were also highlighted by participants.

3001, L/146-147: "I think it is weight in in the sense that you don't feel like doing anything because you feel you are too heavy, unless your body gets used to it, I think it's that."

The participant below refers to his previous experience of being a leading player of the hockey team. People generally refer to their current ideas of 'should' and reflect on their

past experiences of how they used to engage in a health behaviour i.e. and justify it to themselves that they are healthy or have been, which is justified (at least psychologically) not having to engage physical activity at this point.

> *4004, L/174-276: " I don't exercise so much although I was a leading player in hockey, and I was the captain of my team, but when I moved to Denmark, I didn't have time enough to exercise, or I have lost the interest to exercise."*

Participants' rationalised their current behaviour as a result of several reasons. Some of the apparent reasons have been highlighted above such as not being able to overcome the barriers.

3.3.4.2 Attempts & Barriers:

Attempts and barriers were driven by a cyclical level of motivation. Motivation was driven by attempts to maintain balance, as well as aiming to fulfil intrinsic desires. In an attempt to make changes, and work towards overcoming barriers, in the midst of which rationalisation occurs as a process of bringing balance (please refer to figure 3iii). Motivation is a spiral. Participants expressed lack of motivation despite being aware that knowledge is not sufficient. Please see extract below.

> *2004, L/82-83: "It's like telling someone if you touch a fire you will burn, so I know that I have to exercise, it is healthy for my body, I know."*

A direct perceived 'negative' outcome can increase the likelihood of giving in to instant needs, thus reducing motivation. For example, feeling 'tired' or 'exhausted' is perceived as less desirable, and therefore 'giving up' is easier, convenient, will reduce struggle etc. i.e. fulfilling immediate wants and needs.

2003, L/165-166: "You have done it, you know.... I can't run more than one kilometre, then I am tired, actually that's why I stopped."

A lack of immediate positive outcomes can also reduce motivation.

3002, L/78-80: "...but I go to the fitness centre down there (refers to his home neighbourhood perhaps) twice a week, then I stop because I don't feel like it anymore."

- Change

Change and the motivation behind wanting to change, many participants highlighted a need for change in the external (direct environment) prior to them being able to carry out a change. This has been highlighted earlier. The quote bellow illustrates the implicit 'pre-contemplation' for change

Thought processes regarding change were usually implicit.

2001, L/144-145: " ...but I am not an expert.., I do not really think about it when I go shopping as such, just something I wonder about."

Motivation to change behaviour reduces when participants give in to instant needs and desires.

2001, L/154-155: "Yes, but cakes and everything else which tastes good you of course have to careful about."

- Sustain

'Unhealthy behaviour' (poor diet, lack of engaging in physical activity) was often sustained when there was lack of clarity in relation to developing an illness. No implication to take any action was expressed. This was particularly in the migrant

interviews. It was unclear whether there was an intention of wanting to change behaviour due to fear of developing an illness. Rather it was a developed fear which most often appeared to sustain their current behaviour, irrespective of it being perceived healthy or not. This can be linked to how majority of the migrant participants acknowledged that they needed to take action to change behaviour after they had been diagnosed, not at any time prior to this.

> *2002, L/220-221: "When I am ill, I think it is Diabetes and I think that something's the matter with me, but I don't know."*
>
> *2002, L/223-224: "… My doctor tells me that I don't have diabetes, but I think I have diabetes or… I don't know."*

Majority of the Danish participants believed that change could and should occur prior to having received a diagnosis.

> *1001, L/362: "That's the worst you have heard of."*

Participants often referred to contextual aspects when expressing their lack of motivation to change behaviour. Due to the perceived contextual barriers and conflicts, participants expressed a sense of hopelessness and expressed lack of autonomy and competency to change behaviour.

> *4002: L/69-72: "…but there are 2-3 years in between when I moved to Sweden, so it was different and we felt very lonely. I spend a lot of time going back and forth so I got stress because we moved to Sweden and we had a bad economy and could not sell our apartment. At that time I was really stressed and had no social life."*

In a motivational attempt to change behaviour or sustain certain behaviour, behaviours are rationalised for maintaining a sense of psychological balance. Participants 'adapt' to

conditions for achieving this sense of psychological balance. The adaptation occurs in the process of attempts to change behaviour and overcome perceived barriers.

3.3.5 Migration Influence

3.3.5.1 The cultural context

Even though this study looked at four different ethnic groups of participants, this section will look at the similarities expressed across the ethnic minority participants who shared migration as a similar experience. The analysis suggests some key influences on health behaviour from a pre-migration context.

Migrants are quite diverse. There are distinct different cultures amongst migrants. However, similar distinct features that they share is belonging to a non-western country, have families which they initially left behind, being different from the local population in the new country, social links to their country of origin, receptors of the local population's reaction to their migrant status and lack of knowledge of the new environment, as well as language barriers. Migrant participants all shared this process.

Participants tended to reflect on the major life events, namely migration from their country of origin. The reflective process and previous experience appeared to play a role in the current state of health behaviour. In relation to health, participant's pre migration early experiences were reflected on as positive. They referred to conditions under which their health was perceived as ideal. Cultural aspect (customs, values, attitudes etc.) were outlined as highly influential features of health behaviour.

One key finding was how participants still held beliefs, and perceptions which they learned pre-migration and these appeared to have a significant influence on their current behaviour – their day to day habits and routines, and health behaviour. The cultural context pre-migration was a key influence on participants' current health behaviour. Knowledge gained in the earlier years, as well as the customs and collective behaviours of a group seem to be held on to even after they had migrated to Denmark. Health behaviours are also influenced due to this. In fear of losing their close-knit relations and 'identity', participants continuously reflect back to their past. It appears as a reaction to their loss.

Another key finding was that participants expressed loss of opportunity to re-gain optimal health as a result of migration (Please see figure 3viii). Many refer to their early experiences referring to events which are unlikely now – resulting in not taking any action to change current behaviours. None of the participants expressed their own motivation to find opportunities to compensate for their 'lost' opportunities. The reasons for these could vary.

Most migrant participants presented a set of 'core values', which they abode to. These core values were primarily from their pre-migration period, and it can be argued that participants aim and continuously strive to live by the 'standards´, ways (including social processes) which influences individual's openness to any suggested change in the new environment.

A continuous strive to maintain their identity was expressed; this also entailed a sense of incomplete participation, adaptation and integration in the current country.
For example, the participants consciously avoids adapting to 'ways' as a risk to lose his sense of identity is perceived.

> *L/443-445: "Interviewer: Why do you say that you have to try to adapt a little? 3003: It's because, if you do it 100%, then you lose your identity. A lot of immigrants lose their identity…"*

Full integration in the current context was not viewed as ideal or favourable, as the 'risk' of losing one's identity was apparent.

> *3003, L/427-430: "… I would say make a copy of it and try to do it in that way although you are a Muslim and you have another culture or whatever, but try to adapt it…not become like the majority of course...that's very important…then nothing will happen."*

3.3.5.2 *Health behaviours as collective social processes*

Health behaviours were often expressed as collective social processes in a pre-migration context. It was clear and well-conveyed that the culture and environment (pre-migration) appeared to have highly influenced participants' health behaviours, these influences were still apparent today.

These behaviours were highly influenced by the customs, traditions, as well as the social context. Participant's reflection and insight into their current health behaviours further demonstrated they have held on to their customs and traditions, even when they resided in a different social context. This was evident on several aspects. The transition of the 'ways' (in relation to diet and physical activity) from one context to the other was

experienced as difficult and challenging. Participants faced barriers in this different social context. They faced barriers in relation to their behaviours which 'promote' their health in the country to which they have migrated. As the methods and 'ways' which promote health in the new context are not only different, but very foreign for them. Health behaviours were highly influenced by the social culture (pre-migration)

> *Interviewer, L/409-413: "Do you think that this was a part of the area you came from in Pakistan, was it the same culture, and was it the same everybody did?*
> *4002 Yes, it was a culture, yes.*
> *Interviewer: Do you do the same over here?*
> *4002: No, not so much, it's difficult."*

Earlier learnt experiences as well as the norms and cultural aspects are well engraved in participant's lifestyles and current health behaviours.

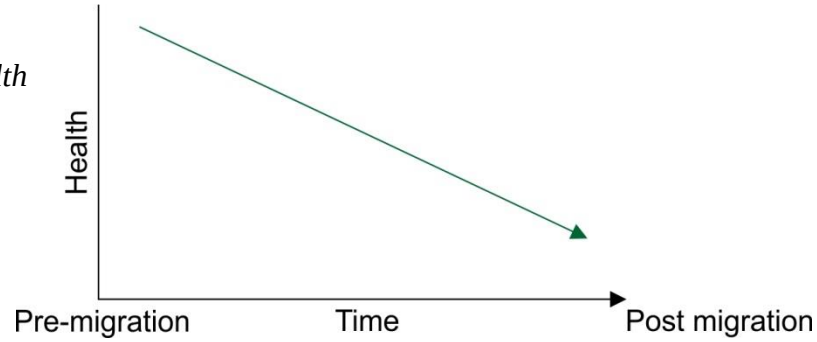
> *2004, L/310-311: "One day I hope that the Somali people open their eyes and say, now it is enough. But it is so wrong what we have learnt from back home."*

Awareness and new health related knowledge appears to have less effect on health behaviours compared to their earlier 'teachings' and 'ways of living'.

> *4004, L/468-469: "Because it is a tradition, it originates from old days, and we continue with it although it is not logical, but we just continue."*

The role of 'cultural background' appears to have deeper rooted influences on health behaviour which are still prevalent today. The participants who had a Turkish back ground had been in Denmark longest, followed by Pakistani and then Somali participants who had been in Denmark for the least number of years. The data did not suggest whether length of stay in the new country had an effect on health behaviours and 'diminishing' influences from the cultural background.

Figure 3.viii. Perceived health decline



3.3.5.3 Perceived loss of possibility to change health behaviour

Despite the barriers and challenges conveyed by the participants, migration resulted in a number of positive outcomes (economic resources etc.). On the other hand, it also brought some changes in the overall structure of their position in the family. Participants also expressed a sense of responsibility for their families as their roles are likely to have changed as a result of migration.

Participants' continuously reflected on their life pre-migration. His (4002 – see quote below) reflection entails expressing that he had a comparatively better health prior to migrating. Pre-migration was reflected upon as a period which is lost, and thereby the state of health (which was better pre-migration) cannot be reversed either (Please refer to figure 3.viii).

Pre-migration learning's and experiences appear to have a complex influence on health behaviour (diet) as expressed by majority of participants, compared to awareness and increase in knowledge. See extract below.

> *4002, L/380-382: "…A lot of people cannot afford to eat 3 times, but I feel good, my health was much better back then. I thought a lot about health back then, we wanted muscles and we trained well"*

Previous and early experiences are referred to continuously. Earlier experiences are expressed as a loss. Even though the participant does not explicitly highlight that this was due to migration.

> *4002, L/374-375: "Yes, in my childhood, but now it is different. At that time it was a tradition to exercise early in the morning in the town where I grew up."*
>
> *3002, L/8-9: "My father was a doctor, so he forced us to exercise; generally my friends in my home town at that time prioritised their health."*

Participants experience their 'ideal state of health' as a loss. It is high likely that this is due to the several losses experienced during the process of migration.

> *4002, L/138-139: "All my life I have been slim, so the last 7-8 years I have gained in weight, previously I was very slim, I have won 1200 metres, a 3rd place in Pakistan once in my life, so now I think….."*

Participants experienced their lack of participation in engaging in positive health behaviours (healthy diet, exercise etc.) as a result of the different context, as well as their perceived level of responsibility which is externalised i.e. portrayed on the external environment.

> *4002, L/457-458: "In my culture in my home country we have exercised and moved, but why we do not do it here is due to a lot of things."*

The influences of the cultural and traditional practices are apparent in participant's daily lives, where deeper rooted cultural beliefs and traditions play a significant role in participants' health behaviour. In the extract below, he (4004) is referring to how his wife's decline in health is a result of deeper rooted cultural 'influences'.

> *4004, L/287-292: "She cooks food, she got diabetes when I got married to her, she went to college and was a sports star, she used to play badminton and she was very slim, then we got married and she got pregnant and we have a bad tradition in Pakistan so when a woman get pregnant she will have to lie in bed without moving and good food is served to her and everything they give her contains fat."*

A change on life perspective was evident from all participants. Despite holding to certain norms, traditions, and cultural aspects, a small number of the migrant participants (Pakistani and Turkish particularly) tried to adjust their lifestyle to the current context to a certain extent. The analysis suggests that there is an attempt to maintain certain beliefs, yet still aiming to adjust to the 'new ways'. Please see extract below.

> *3003, L/39-42: "And my view on life changed, I looked at the human beings, how they experience everyday life, I complied with it and began exercising during the morning, biking and going for long walks, eat healthy, and I do not eat so much meat, maybe once a month."*

Participant's implicit wish to regain the idealised state of health is experienced when they return to their country of origin (see extract below). Continuous reflection on their past ideal state of health is attempted to be restored, through being present in the same context and environment, for example when they are on holidays.

> *3002, L/428-429: "When we go to Turkey, we eat healthier because of a huge selection of all sorts of vegetables, fantastic, we buy all kinds."*

Participants felt very close to their norms, culture and traditions related to their country of origin. Even though majority had resided in Denmark for many years, their close knit relations to the country of origin were apparent. Deeper rooted cultural influences which have an influence on health behaviour were apparent across all migrant interviews (please see extract below).

4004, L/56: "…and my life was completely different…"

2002, L/98: "… I can't resist my country and my people…"

There is a sense of feelings of attachments are apparent in the extract from participant 2002. Despite understanding and acknowledging the need to 'adjust' their diet behaviour, there was a perceived decline in overall health.

Chapter 4

Discussion

The current study investigated the individual, contextual and cultural influences on diet and physical activity behaviour in migrant (Somali, Turkish and Pakistani) and Danish professional bus drivers. Using a qualitative method (context observations & semi-structured interviews), it was possible to explore the facets and interplay of the complex nature of influences on diet and physical activity related health in a workplace. An insight into ethnic minorities' migration experience also provided an opportunity to closely understand their health related views, beliefs and behaviour.

Five higher order categories were found in the data (meanings of health, health behaviour and the potential to change, adaptation, workplace influences on health and migration influence). These higher order categories supported the core category – *Impact of individual, contextual and cultural influences* on health behaviours. Even though these five categories are related, they reflect different dimensions of influence and the potential to change physical activity and diet behaviour. These influences can operate on different levels i.e. the individual and the environment. The interplay between the dimensions has been found to have a key influence on health behaviour and change within a workplace context.

The five main higher order categories highlighted in this study will be discussed within the broader framework of individual, contextual and cultural influences on diet and physical activity behaviours. The framework developed in this study will also be discussed in relation to relevant existing models of behaviour and change, and it will be

argued that while the findings of this study are consistent with behaviour change literature they add to the literature by a) exploring health perceptions and behaviours within a specific area of work place health; the transport industry and a high risk group. The study further contributes to b) developing the role of cultural and environmental influences on perceived health and behaviour by exploring the role of ethnicity and migration.

4.1 Influences at the individual level

4.1.1 Meanings of Health

This section will address the 'meanings of health' and the experienced 'influence of migration' of bus drivers. Firstly, the higher order category 'meaning of health' is discussed, followed by its respective sub-categories. The role of skills, competence and empowerment in relation to behaviour is discussed, and finally the influence of the migration and its role is discussed, with reference to previous research and theory.

The findings of the study suggest that the way we understand and perceive health has several dimensions. The findings from the present study showed that migrant and Danish bus drivers had a differentiated approach to understanding of health. These can be understood as two dimensions of health; absence of disease and the holistic view". These were found to be quite multi-dimensional in that each dimension comprised of multiple factors. For example, a holistic health perception consisted of psychological, social, physical and religious-faith domains. These domains were related to another layer of constructs (empowerment, self-efficacy, colleagues, family & social network

etc. In order to gain an overview of the dimensions, as well as understand the depths of these we need to firstly understand the way health is experienced. Health is expressed in many ways and through many channels of our society, and has been defined in a number of ways. According to the World Health Organisation, 'Health is a state of complete physical, mental, a social well-being and not merely the absence of disease or infirmity.' (WHO, 1946). Perceptions and understandings of 'good state of health' are at the core for maintenance of behaviour, where peoples understanding of health and their subjective perceptions of health determine their self-rated state of health and behaviour, despite the objective measures (Benyamini, 2008). In an everyday context, lay terms such as 'feeling good' or expressing 'feeling fine' are expressions which present a dimension of health. Yet health remains complicated to understand, as it is often goes beyond expressing how one feels currently. It is not only an aspect of how we are feeling/doing today i.e. it is not alone an aspect of our daily life nor is it entirely about our fully functioning physically ability. It is however correlated with our lay understanding of disease and illness (Herzlich, 1973). Understanding the lay terms of how health is expressed, can therefore provide further insight into understanding the depths of this.

The results further highlight; that health, whether it was an 'absence of disease' or a holistic was most often a part of a natural, lay attitude to participants lives. Consistent with previous research, Bloor's study (1995) highlighted that in individuals daily lives, as much as mundane activities signify a 'to do' notion of health, this 'way of our life' takes health for granted, and becomes a chain of activities. Only when it is threatened, is one forced to seek alternatives. Bloor (1995) outlined that health was something one

'had', and it comprises of something that you 'can do' and a natural understanding of well-being defined health. It is not necessarily a conscious condition in an everyday context.

Regardless of the health dimension participants perceptions rested upon, there was an ultimate strive to maintain a self-perceived equilibrium, resulting in a complex value hierarchy. From a broader perspective, this finding is consistent with Blaxter's (1990) summary of differences in how health is understood. He highlights that overall health could be defined as 'negative' – relating it to absence of disease or 'positive' (which has been termed holistic in the current study). Similar to Blaxter's broad notion, the results of this study also emphasise the presence of these two dimensions.

Similar to the findings of this study, Herzlich (1973) highlighted in his study that health was based on intrinsic characteristic within individuals. The external environment could pose challenges and distress to the equilibrium (balance) one unconsciously attempts to maintain. Building on his work, Blaxter (1983, 1990, and 2002) explained that health was not a single one sided concept, yet it was multi-dimensional concept being applied to one's life.

The 'absence of disease' dimension was associated to lack of personal responsibility i.e. health is 'absence of disease'. Participants used lay terms such as 'felt fine' when explaining health beliefs and perceptions. Unless they had received a diagnosis, participants expressed their state of health as 'fine', and perceived it to be in a good state regardless of being overweight and engaging in behaviour which poses risk to

health (unhealthy diet, lack of physical activity and smoking). Activities which increase the risk of disease are therefore not acknowledged as a threat to health and the perceptions of risk (sedentary behaviour, lack of physical activity, consuming high fat diet) are likely to be taken less seriously. Similar to previous research (Greenhalgh, Helman & Chowdhury, 1998; Ludwig, Cox & Ellahi, 2011), some participants did not recognise the need to lose weight or did not share the advice of losing weight solely because they did not see extra weight as an indication of being unhealthy alone. On the contrary, it suggests good health and status in their respective ethnic group.

With respect to this, it can be argued that health is understood in terms of having a health capital which we are born with and which reduces as you get older (Blaxter, 1990). As migrant participants in this study had a history of migration, they may feel that their 'stock' is reducing over time – and it is almost inevitable to avoid the reduction or enhance the stock. This is therefore likely to reduce uptake and lack of recognition for opportunities such as (a) improving diet (b) engaging in physical activity to avoid becoming overweight. This was not very apparent among the Danish population in the interviews. Danish bus drivers expressed personal responsibility and control over their health comparatively.

A recent review suggested that there is still lack of evidence on how to best deliver physical activity and diet interventions to ethnic minority populations (Liu et al, 2012). Part of the reason may be that ethnic minority populations lack understanding of the relationship between unhealthy behaviour disease (Lucas, Murray & Kinra, 2013), and therefore may not take part in behaviour change interventions, or that it is not culturally

appropriate. This may require wider understanding of how health is understood within certain populations, and the associated health beliefs and perceptions, as this may be considerably different than the majority. Previous research suggests taking account of cultural norms and individualistic perceptions in interventions (Lawton et al, 2008), which is consistent to the findings of the current study.

On the other hand, holistic views were more closely associated with internalised responsibility. Migrant participants who held holistic perceptions of health expressed social and family relation to have a key influence on their preferences in relation to diet and physical activity, as well as their health in general. This is likely as they carry an experience and relations to a different country, and the previous learnt skills, knowledge, and beliefs of living a 'healthy lifestyle' are still an integrated part of their life at present. The influence of pre-migration period is discussed in a later section.

One of the aspects which were found across both dimensions of health was the role of religious faith and fatalistic beliefs. Although the 'way' religious faith intersected with the perception of health was relatively different across the two dimensions. For example, participants who held 'absence of disease' beliefs regarded having a certain condition/illness as a result of factors outside their own control, where some indicated that this was the will of 'Allah'. Terms such as 'acceptance' and 'being thankful' to God (both irrespective of health status) were used to externalise personal responsibility. However, it is possible that a factor of the reduced sense of empowerment over personal control was previous experiences of failure to influence the fate of their own personal lives (health, employment, finances) leading to a low health locus of control (Rotter,

1954). Resulting in the submission to fate (it is 'up to God') for their own personal destinies and hence relinquishing responsibility, somewhat, for change. Similar to the findings of the current study, this concept of externalising personal responsibility in regards to health was also found in Lawton et al's study (2006) where he reported that adult migrants regarded having developed Type II diabetes at the will of God/Allah, genetics, or a change in climate. On the contrary, participants who held 'holistic' health beliefs viewed religious faith as a factor which provided faith and spiritual well-being, and gave strength to manage and cope with challenges. This is not entirely the same as the results Farooqi et al. (2000) identified in his study, where he reported health status as the will of God but the individual still had personal responsibility over their personal health. Other studies have found that migrants are more likely to externalise personal responsibility compared to white groups (Grace et al 2008; Minas, Klimidis & Tuncer 2007).

On the other hand, religious faith appeared to play a positive role in 'holistic views' dimension, where it contributed to the psychological aspects of having a 'positive mind' and strengthening one's mental capacity to deal with challenges – therefore bringing a positive psychological influence on physical and psychological health through a sense of empowerment, and personal responsibly being directed internally rather than externally. This is consistent with previous research highlighting the positive effects of religious faith on health (Levin & Chatters, 1998; Ellison & Levin, 1998; Seybold & Hill, 2001). The findings suggest that regardless of having an experience of migration and similar backgrounds, it is likely, that the link between religious faith and health beliefs may differ significantly.

The diversity in health perceptions and beliefs found in this study suggests that there is a need to be open towards having a dynamic view of health. Health is dynamic and multi-faceted - whether it is made up of components forming an 'absence of disease' perception, or whether it is holistic. Having one perception or the other, is influenced by individual's life course history, living conditions, culture and social contexts in which they live. It is therefore dynamic and changing in nature dependent upon these factors. Hence, the study suggests that it is important to acknowledge the relations between the individual as well as their social context in which health is 'experienced' and lived in order to gain a fuller understanding of health related perceptions and beliefs. Successful behaviour change interventions implemented at the workplace may be effectively assisted in the development and implementation if we understand the lifestyle, beliefs, perceptions, cultural and the social factors of the employees.

In a workplace with high ethnic diversity, the application of contemporary western understanding of behaviour change interventions, which usually rely on the assumption that individuals are inclined to have an inherent motivation to focus on health improving behaviours i.e. self-investment. As a result of this we might miss out any other factors, such as the cultural factor which plays a role in how individuals perceive health and hold health beliefs. For example concepts such as self-efficacy and empowerment, where an emphasis is placed on the individual and level of self-efficacy requires motivation and interest of investment in personal health by the individual, however the process of active engagement in physical activity and improving diet was not found to be planned. Individuals are influenced by a number of factors, culture and social environments are also amongst them.

Empowerment appears to be strongly influenced by cultural and religious beliefs as also found in previous studies (Grace et al., 2008; Thirodkar et al, 2011).

The findings from the current study suggest that interventions need to find methods on how to develop empowerment focused efforts which can internalise personal responsibility from external. The findings further suggest that application of religious faith related aspects which internalise (rather than externalise) personal responsibility may assist in developing culturally sensitive behaviour change interventions for a multi ethnic workforce with a complex value hierarchy.

4.1.1.1 Skills, Competence & Empowerment in relation to behaviour

The diversity in health perceptions and the ability to make and maintain a change is likely to be a result of the difference in levels of skills, competence and empowerment. Understanding people's level of skills and competence and their level of empowerment as well as their lay expressions can provide insight into people's way of making sense of health in an everyday perspective (Sørensen et al, 2012; Osborn et al, 2011; Nutbeam, 2000; Pleasant & Kuruvilla, 2008).

The level of health related knowledge and skills and ones level of empowerment involve both the context (and setting) in which health demands are made and the skills that people bring to that situation (Rudd, Moeykens, & Colton, 1999). Previous literature demonstrates that an increased level of self-efficacy is positively linked to changing health risk behaviour (Bandura, 1990; Schwarzer & Renner, 2000). Health perception, as well as knowledge, competence, skills and empowerment affects the way people relate to their health and this can contribute to explaining their current state of

health (Lucas, Murray; Kinra, 2008). This may differ depending on the cultural and social context, as they appear to be closely related to cultural phenomenon. Nierken's et al (2005) in their study on smoking cessation amongst Turkish men concluded that it is important to include ethnic specific salient beliefs, such as the subjective norm of the religious leader. For example, in relation to physical activity, a number migrant participants compared to Danish participants had very passive goal of being physically fit. On the other hand there was a clear awareness of the importance of physical activity, primarily as a result of being overweight and working as a bus driver.

Some migrant participants reflected on their religious faith which encourages them to look after their health. In this respect, certain forms of activities such as 'long walks' and praying (namaz) were considered appropriate. There was no concept of religious faith in relation to physical activity or diet with the Danish participants. In relation to diet, migrant participants expressed difficulty in changing their traditional dietary habits and were resistant to change in this respect. On the contrary, the Danish participants appeared more likely to do so.

The theoretical constructs highlighted in the introduction with respect to social cognition models, do not account for the importance of the context (Abraham & Michie, 2008; Michie, Johnston, Francis et al, 2008; Michie et al, 2011; Michie & Johnston, 2012).

Previous studies, as highlighted above, conclude on integrating different theoretical constructs in interventions targeting migrant groups. This has resulted in incoherent

suggestions, with no clear direction on how to develop and implement interventions for specific populations. Behaviour change interventions for a highly ethnically diverse workplace population need to develop interventions which are clear and consistent, so that we are in a better position to address this. Although previous research has suggested behaviour change techniques to change skills and capabilities (Michie et al, 2008; Webb et al, 2010), but to my knowledge, there are no current studies which have attempted to outline the set of techniques most appropriate for a workplace such as the one under investigation in the current study and which 'mode' of delivery is appropriate in this type of workplace taking into account the limited resources in such workplaces. Strategies to enhance self-efficacy, competencies and skills can be integrated into interventions at several (at individual, environmental, and societal) levels. For this to occur, an individual's (e.g.employee) skills need to be accounted for within a certain context. The COM-B model's (Miche et al, 2011) construct of 'capability' addresses this aspect. The 'capability' construct of the model suggests that individuals need to have psychological (knowledge, cognitive and interpersonal skills, memory, attention and decision processes and behavioural regulation) or/and physical ability (skills) to enact the behaviour (Michie et al, 2011; Cane et al, 2012). Intervention development should also consider addressing 'behaviour change techniques' which are culturally appropriate and sensitive to the population group. Techniques identified in the behaviour taxonomy (Abraham & Michie, 2008) such as 'prompt identification of a role model' or 'prompt practice' are a few which could be culturally tailored.

Furthermore, behaviour change interventions aimed for ethnic groups at the workplace should (i) use community resources to publicize the intervention and increase

accessibility; (ii) identify and address barriers to access and participation; (iii) develop communication strategies which are sensitive to language use and information requirements; (iv) work with cultural or religious values that either promote or hinder behavioural change; and (v) accommodate varying degrees of cultural identification (Netto et al, 2010). However the adaptation and appropriateness of these principles need further validation and to my knowledge, the application of these has not been used at the workplace.

4.1.1.2 Self-perceived migration influence

This section may consist of some overlap with the 'absence of disease' dimension, yet key findings will be discussed to illustrate the particular influence of migration.

The process of migration brings with it difference in people's lifestyles and cultures. The countries which the participants have migrated from carry a huge diversity (religion, education, culture, language, economic status) compared to their current host country. Migrants often experience that the 'new' context entails challenges such as the social, political and language barriers which are often beyond the coping ability of the migrants (Syed & Vangen 2003; Hjelde, 2004). Overall, the results suggest that participants with a migrant experience have brought healthcare beliefs, practices and traditions with them from their homeland. These play an influential role in their diet and physical activity behaviour which can further influence the perception of onset and severity of disease in the future.

Participants in the current study, who had experienced drastic change in culture and environment as a result of migration, attached a meaning to health as a correlation with

their experiences across a life course perspective (for example pre-post migration). For example, they compared their health pre-post migration and shared this perception of health being on a continuum which has either improved or become worse, where migration appears to play a role. The worsening of health may also be associated to having experienced a number of losses (identity, difference in status/role within the family) as a result of migration (Kristiansen, Mygind & Krasnik, 2007), and thereby it is likely that their emphasis on health as a 'reducing health capital' is also considered as an 'acceptable loss'. It is likely that they consider it 'acceptable, as they often have other, more fundamental 'responsibilities' to address which are given a higher priority. The experience of loss in this regard may be projected on to health related behaviour where they may experience a lack of connection between their current behaviour and its potential future health outcome (Kristiansen, Mygind & Krasnik, 2007). The onset of illness is therefore most commonly perceived as inevitable and the confidence in an opportunity to change is diminished.

Lack of health related knowledge and perceived lack of control suggests that behaviour change may likely to be more challenging with groups who may have experienced migration. This is an important factor which can facilitate in gaining an in-depth understanding of health beliefs and perceptions amongst ethnic minority bus drivers. Furthermore, this can further guide specific intervention development. For example, there are various studies which have shown that health education messages can fail, since the messages may not appear in line with their own experiences, and they will either reject or fail to respond (Blaxter, 1983; Davison et al., 1991; Hunt et al., 1998).

In addition to that, results do show that the striving for a self-perceived equilibrium and a sense of balance remains fundamental despite, the differences in perceptions or with or without a migration experience. The self-perceived equilibrium may be a result of migrant bus drivers associating their perceptions to others factors which influence health e.g. family relations, community support etc. For example, similar to previous research findings, participants understood health in relation to their reference groups i.e. those we compare our health to and those who we interact with in relation to health behaviours (Conner & Norman, 1995; Kawachi, Subramanian, Almeida-Filho, 2002).

Several theoretical models imply that behaviour change is most often initiated when individuals perceive a self-recognised poor state of health (feeling physically less functional etc.). When individuals perceive their health to be at risk, it enhances a person's readiness to change (transtheoretical model) (Maddux, Brawley & Boykin, 1995; Marcus, Emmons, Simkin-Silverman, 1977; Pinto et al., 2001, Kim, Cardinal & Lee, 2006). Psychological models suggest that in the likelihood of not having perceived a need for change, it is unlikely a behaviour change to occur (Bandura, 1992; Maddux, 1993; Wallston, 1994). Taking into consideration that the participants were first generation migrants, who had resided in Denmark between eight to forty years, cultural influences appear to have persisted and 'shaped' their health behaviour. In addition to this, it is likely that the expressed beliefs and perception may attenuate over time, however as many have accepted 'the declining state of health' behaviour change interventions may need to give greater focus on applying methods that can embrace these factors of ingrained beliefs and perceptions.

Further to this, participation of ethnic minorities in behaviour change interventions is often low (Estabrooks Lee & Gyurcsik, 2003; Gerber Barker & Puhse, 2012; Evans, Lewis & Hudson, 2012). One of the causes for this is lack of appeal in the promotion and inability to relate to them (Netto et al., 2010). Migrant groups often experience barriers e.g. language to participate. A lower socio-economic level also influences participation (Resnicow et al., 1999). Behaviour change interventions targeted towards mixed ethnic groups have often been criticised for not being able to reach those who at higher risk and need it most (Hunt, 2003; Johnson et al, 2012). In a workplace such as this one, where there is a vast ethnic difference, as well as being a 'high risk' group, a 'one size fits all' approach is less likely to suit the population. It is therefore suggested, that prior to developing behaviour change interventions, there is a need to explore and understand the diverse health perceptions and beliefs of this group.

One option is to consider working with appropriate methods that may be in a good position to embrace the deep-rooted cultural influences outlined by Netto (2010). This may increase likelihood of perceiving risks associated with behaviour and may increase motivation to change (Ajzen, 1985; Schwarzer, 1992, 1999, 2001) as adopting culturally appropriate interventions may enhance the likelihood of recognising resulting desirable personal consequences, and therefore may be more likely to engage in new behaviour.

The Behaviour change wheel (Michie et al, 2011) may be useful in identifying how to develop interventions at a multi-ethnic workplace compared to earlier models of behaviour change, as it employs a wider framework encompassing different layers of influence, which have also been previously outlined Fishbein et al (2001).

4.2 Influence of the contextual environment

4.2.1 Workplace influences on health

This section will address the contextual environment, where the higher order category 'workplaces influences' on behaviour and change will be discussed.

The overall results suggest that there is lack of autonomy and control, along with structural aspects (unusual & inflexible work hours, shift work, breaks at different times, changing schedules, lack of options for healthy food and/or lack of opportunity to engage in physical activity) of a bus drivers job, which are perceived as barriers to engage in a healthy diet and increase physical activity. As a result of this, a spill-over effect was found. This lack of control and autonomy 'spills over' to their health behaviours and the self-perceived competence, perceived control to change diet diminishes as a result. This will be elaborated further on. When addressing possibilities for behaviour change, the results suggest 'conditions' prior to change need to be affected too i.e. certain alterations in the environment needed to take place.

There is evidence suggesting that the work environment can significantly contribute to overweight amongst its employees (French, Story & Jeffery 2001; French 2005; Bonde, Viikari-Juntura 2013). At the same time workplace environments carry the opportunity to positively influence diet and physical activity behaviours (French, 2005). The findings will be discussed in light of this conflict. The findings will be discussed with respect to this variation.

4.2.1.1 Lack of autonomy and perceived control

The nature of the job and the lack of autonomy and its effect on diet and physical activity will firstly be discussed. Human needs such as autonomy, belongingness and competence are considered fundamental for well-being and optimal functioning (Deci & Ryan, 1991, 1995, 2000, and 2008). Deci & Ryan explain 'autonomy' as the motivation needed to pursue personal interests, whereas competence is the skills and abilities needed. As these are fundamental needs, individuals experience a sense of subjective well-being and balance when these are fulfilled. The Self Determination Theory theorises these as basic needs, and Bandura (1977) focuses on the enhancement of self-efficacy for perceived belief in one's ability to undergo and make change. Balance is often achieved through a sense of motivation to carry out desired goals and feed personal preferences and choices. The motivation is often continuous when the goal is to fulfil inner desires (West, 2006). The relation between autonomy and control may therefore play a role in improving physical activity and diet (Karasek & Theorell, 1990).

Consistent with the findings from the relatively few reviews carried out over the past few years (Kompier & Martino, 2000; Tse, Flin & Mearns, 2006), the results of the current study imply that due to the job characteristics (dissatisfied and difficult passengers, abuse from passengers. reduced control etc.) participants experience a lack of autonomy (Deci et al, 1991), high demand, low control and support (Rotter, 1954; Karasek, 1990; Bulik, 2005), and a sense of learned helplessness (Seligman, 1975) which then 'spills over' to lack of perceived control on health behaviours (see fig. 3.vi). These also contribute to high risks of ill health, uptake of unhealthy behaviour and leading to absenteeism, burn out and to decreased productivity (Chen & Kao, 2013).

Previous research demonstrates how learned helplessness and lack of empowerment and control can play a vital role in contributing towards poor health (Wallerstein, 1992). This occurs when people falsely believe that they have no power to change events. That these events are uncontrollable and unpredictable leading to increased levels of stress and lack of competence in believing that change is possible (Henry, 2005). When people feel that they have no control over their situation, they may also begin to behave in a helpless manner on other aspects. This inaction can lead people to overlook opportunities for relief or change. The term learned helplessness is being applied here for several reasons. The role of control or no control plays an important role in work well-being (Specter et al, 2002; Judge & Bono, 2001; Ng, Sorensen & Eby, 2006). Sense of control is important in preventing learned helplessness. The lack of control over ones health within this job structure can disempower bus drivers' capacity, ability and competence to change health behaviour (diet and physical activity). Whether or not the helplessness is chronic, acute, and narrow (within this job only) or broad (expands outside the workplace) is not clear as such. This job (where a service is being provided to the general public), comes with several factors which are not in 'control' of oneself. Learned helplessness can reduce empowerment, and therefore reduce the 'ability'/competence to control and to have influence over aspects, health behaviour (change in diet and physical activity) being one of them. With respect to migrant participants, we can draw inferences about a further lack of control compared to the Danish participants due to losses highlighted earlier.

Further to this, the structures of this job hamper the possibility for maintaining a positive balance between work and personal health. When individuals do not have the

opportunity to maintain a positive and healthy work-life balance, they feel a sense of loss of autonomy (Gropel & Kuhl, 2009) affecting their needs fulfilment (Ryan & Deci, 2008). This further contributes towards a spill-over effect (Evans & Cohen, 2004). A perceived lack of autonomy and control at work is portrayed in bus drivers health behaviours (diet and exercise), where the lack of autonomy and control in the job implies a 'learnt' lack of autonomy and control in personal health and wellbeing.

A number of characteristics point towards environmental factors and job characteristics which hamper autonomy, locus of control and therefore a reduced sense of self-perceived competence and limited empowerment is experienced. The study suggests that these need to be addressed as fundamental aspects to enhance empowerment.
As a result of the job characteristics (outlined in results), and especially limited opportunities the fundamental needs such as autonomy are not fulfilled (Ryan & Deci, 2008), which may directly affect one's skill set and motivation. One example is reducing demand of job, in order to enhance control and improve sense of autonomy. The job-demand resource model implies that a demanding work environment can often lead to stress, and devalue motivation and limited autonomy at the workplace (Karasek, 1979). This can be linked to the COM-B model (Michie et al, 2011) suggesting that an individual needs to have the motivation, capability and opportunity to change behavior. The characteristics outlined here suggest that the capability is hampered or limited and there is no opportunity to change.

4.2.1.2 Conditions of change

As the framework (Figure 3.vi) highlights, the sense of 'responsibility to change' is projected on to the workplace where participants identified 'needs' for change. These

needs were expressed as ‘changes that were required’ in the external environment i.e. the workplace prior to undertaking any health behaviour change. This is not entirely similar to previous research which identified the ‘needs for change’ as ‘basic needs’ (e.g. having the opportunity to take a short break when you are entitled to it) or structural changes (driving schedules) before health could be improved (Ragland, et al, 1998b; French, 2005). Ragland in his study identified that addressing basic needs would improve health, whereas the current study refers to these as conditions prior to change can occur. Once these needs were met, some participants expressed that it would provide an opportunity for changing health related behaviour. Unless these ‘needs’ were met it was perceived difficult (if not impossible) to engage in physical activity or improve their diet.

This can be seen in the light of the COM-B model’s construct of ‘capability’ which addresses the psychological and physical ability (Michie et al, 2011). Participants in the current study described how ‘certain conditions need to be met’ prior to change taking place. Most of these conditions consisted of environmental and job characteristic changes. The model suggests that in order for behaviour change to occur, there are three fundamental aspects which need to be present; namely capability, motivation and opportunity. Motivation and capability are based on the individual, whereas opportunity is reliant on the environment. They describe that in order to change behaviour, we need to have ‘capability’ (e.g. knowledge and skills) and opportunity which facilitates motivation to change.

More so, the BCW suggests that behaviour needs to be understood in the context. For example, to address the concept of capability in this group, we need to apply behaviour

change techniques which enhance perceived control, and autonomy. Prior to this can take place, we also need to develop interventions functions in the environment such as environmental re-structuring which can facilitate this process. In order for this to occur, supportive policies need to be selected.

Taking the workplace influences into account, the following section addresses the last sections of the theoretical framework; health behaviour and the potential to change & adaptation in light of previous research and theory.

4.3 Psychological constructs at play in an everyday

The findings address the psychological process in an everyday context with respect to physical activity and diet behaviour. The diversities found in relation to 'potential to change' diet and physical behaviour were different amongst migrant participants and Danish participants. This is likely to be a result of the diversities identified in the health perceptions and beliefs between ethnic and migrants as mentioned earlier. As the results indicate, the potential for behaviour change is a complex process and needs to be understood within a context. The relational view between the individual and the environmental and psychosocial context is discussed.

All participants aimed to maintain a balance (through a process of self-perceived equilibrium) in their everyday life, an implicit form of motivation. This balance should be understood in terms of how participants psychologically handle and negotiate on everyday challenges. A sense of stability, structure and sense of balance.

Balance is a widely used term by many (Polock, Durward & Rowe, 2000). However, the concept of balance and 'self-perceived equilibrium' in this study should be

understood as bus driver's motivation and attempt to achieve a sense of balance (through a process of equilibrium) in relation to their account of the everyday work life, diet and physical activity behaviours. Balance is the key interest achieved through a sense of 'compromise' between the external environment (workplace) and personal interest (intrinsic desires). Similar to 'autonomous' motivation (intrinsic motivation) which relates to engaging in behaviours that fulfil personally relevant goals which makes them person feel satisfied or rewarded. Deci & Ryan (1985, 2000) argue that such autonomous motivations satisfy three basic needs: autonomy, competence and relatedness. These motivations tend to be associated with sense of well-being. As previously highlighted, bus drivers experience a low locus of control and autonomy. It is likely that due to low locus of control in the job, and the spill over effect, they compensate the 'sense of balance' as a result of the loss of control in other areas.

We can attempt to understand the very initial process (Intrinsic desires- wants and needs, should – see fig 3.vii) of achieving a sense of balance through the Prime theory of motivation (West, 2006). The theory highlights that wants and needs are the driving force behind our behaviour. Our beliefs of 'good and bad' can only have an influence on our behaviour if they create strong wants and needs at that given point in time. To my knowledge, there is no current research on the application of Prime Theory to understand diet and/or physical activity behaviour. The Prime theory highlights that 'at every moment we act in pursuit of what we most want or need at that moment' (West, 2006). Even though the Prime Theory is often applied in addiction treatment – the results from the current study can be seen in the light of similar psychological constructs highlighted in Prime theory to understand individual's everyday 'behaviour'.

The Prime theory can provide insight into the very basic psychological aspects at the individual level. Categories and subcategories of the current study (intrinsic desires, choices and preferences, adaptation) can be seem in the light of PRIME model (West 2006), where 'intrinsic desires' is similar to Wests definition of motivation mentioned above and the 'should' subcategory can be related to plans and motives, whereas 'wants and needs' are related to impulses. Firstly its possible application to understand diet behaviour can provide insight into (1) the motivation to 'indulge' despite an aim to maintain a healthy and well-balanced diet and (2) Even when individuals implement personal goals to refrain from certain foods, then how can we explain 'relapse' events?

The category of 'wants', 'needs', and 'should's indicate the conflict with aspects of motivation in relation to long term aims and intentions. For example, the intention that one should lose weight, does not necessarily mean one will follow through the plans and goals (Gollwitzer, 1999), as the barriers experienced extend beyond their self-perceived competence to manage, even though they might have a long term plan to do so nonetheless (intention). Individuals 'compromise' on their long term plans for momentarily satisfaction and gratification. This also highlights that individuals have a tendency to react and act on a compromise between intrinsic desires and long term plans. This leads to conclude that motivation is varying dependant on situations, outcomes, perceived risks and benefits.

Moreover, the COM-B model addresses the component of motivation as part of its central foundation. Motivation is defined as all those brain processes that energise and

direct behaviour, not just goals and decision making. It includes habitual processes, emotional responding as well as analytical decision making (Michie et al, 2011). The 'choices and preference' also had a key influence on behaviour. Choice and preferences of behaviour were highly influenced by health related knowledge, influential others, early experiences and familiarity along with physical and psychological factors. In relation to health related knowledge, bus drivers significantly underestimate their risk of disease (Type 2 Diabetes Mellitus), and increase in health related knowledge has been suggested previously (De-Ville Almond, 2010). The reason for this may be their unrealistic optimism (Weinstein, 1983). Furthermore, 'health related knowledge' was highly influenced by cultural factors in migrant participants. Influential others are related to the theoretical construct of subjective norm (beliefs about important others attitude to behaviour and the motivation to comply with others) in the theory of planned behaviour (Fishbein & Ajzen, 1975). Early experience and familiarity are not accounted for in the earlier theoretical models; although it could be argued that familiarity is related to the self-efficacy i.e. familiarity can lead to confidence. Aspects such as influential others (subjective norms), early experiences and familiarity played a key role in migrants diet and physical activity behaviour and intention to change. It is not to say that these aspects do not play a significant role in non-migrants, but it is worth accounting for that due to migration from a culture and environment (Pakistan, Turkey & Somalia) which is vastly different to the host country (Denmark), these factors may play a much more significant role as they play an influential role for the need of sense of belonging and identity (Ryan, Dooley & Benson, 2008). This ethnic and cultural factor is not addressed in any of the theoretical

models. Social cognition models as mentioned previously do not account for the cultural, ethnic and social environment either.

'Availability and access' is the environmental component. Behaviour is seen to be influenced by the availability and access to opportunities. This construct is not clear in the social cognition models as they do not address the environmental influence, and put a higher emphasis on the individual. 'Availability and access' can be seen in the light of the 'opportunity' component in the COM-B model. The opportunity component entails the physical opportunity and environmental context and resources afforded by the environment and social opportunity afforded by the cultural milieu (social influence) that dictates the way that we think about things (e.g., the words and concepts that make up our language) (Michie et al. 2011; Cane et al, 2012).

The 'perceived change required' category relates to constructs such as susceptibility and severity from the health belief model. For example, bus drivers referred to suggesting change when they realise that their risk of becoming ill was high and serious. Regardless of this, they experienced a low level of perceived control over their behaviour due to perceiving the environment as the determining factor for their risk. In order to prevent illness, the application of the HBM (Hochbaum, 1958; Rosenstock 1966; Becker, 1974; Sharma and Romas, 2012) will refer to the importance of bus drivers developing preventive health behaviours and having the motivation to be able to make sound decisions regarding health. However we need to question whether bus drivers will take up healthy eating and engage in physical activity if they believe that the negative health condition that they might risk is not in their control i.e. the job

structures (perceived susceptibility), and whether or not it is important to engage further in it when they report ad-hoc engaging in health promotion behaviour (perceived severity) Furthermore, it is questionable whether bus drivers will believe that they can successfully change their behaviour when the determinants of unhealthy diet and lack of physical activity is perceived as not being entirely in their control, and thereby there may not be the benefits (perceived benefits and barriers).

The results imply that when a need for behaviour change was perceived, participants set an 'if – then' condition for change. This can be related to the self-regulatory strategy for implementation intention where an individual assesses the outcome of a certain action (Gollwitzer, 1999). It was found that the self-regulatory process helped participants achieve their goals. Previous research highlights that the implementation of intentions can improve the likelihood and capacity for individuals to change diet (Armitage, 2004) and physical activity (Milne, Orbell, & Sheeran, 2002; Prestwich, Lawton, & Conner, 2003; Rise, Thompson, & Verplanken, 2003). However, these studies did not account for the impact of the environment. For example, environmental factors which can enhance or inhibit the intention to carry out a goal were not accounted for – which can possibly overrule the intention to carry out a certain goals. It can also be seen in the light of constructs of HBM (Hochbaum, 1958; Rosenstock 1966; Becker, 1974) or response effectiveness of the protection motivation theory (Rogers, 1975, 1985) where bus drivers assessed the costs (It will be too expensive to buy healthy food or I would have to make an extra effort to walk to the gym after work when I am tired) and benefit and response effectiveness (changing my diet will help doing physical activity will make me healthier and less tired) involved in changing behaviour.

With regards to routines and habits, the current study highlights that diet and physical activity behaviour is a result of a complex combination of the environment and psychological factors. A complex integration of factors lead to formation of routines and habits. Behaviour change efforts in the bus company's should focus efforts towards efforts intervening at several layers to support and initiate adoption of health enhancing routine and habits, which at the moment are not found; where the environmental context plays a significantly health hampering influence, and the opportunity to change is very limited. These should be carried out in a systematic and consistent manner.

The process of adaptation is complex in as much that it aims to address an underlying cognitive process of achieving sense of balance. Balance is achieved through daily attempts to meet high demands and efforts to work against perceived barriers. Participants engage in a cognitive rationalisation process for self-affirmation of their behaviour. However it was found that there is a cross over between 'attempts to change behaviour' and experienced barriers. A sense of 'rationalising' of poor diet and lack of physical activity was expressed. Participants may rationalise their unhealthy behaviour partly because the perceived inability (reduced control) to overcome perceived barriers (financial resources, lack of time, physical limitations (being overweight) and reduced control to bring change). Attempts to change were limited to a large extent as participants highlighted need for change in the environment ('condition for change' category) Behaviour was often sustained as a result of lack of perceived susceptibility and severity or inability to see current health status as a threat. This provides insight into the cognitive processes of some of the factors which may hinder change in behaviour. Since there are some overlapping constructs identified here, some relate to motivation, others to capability and some to barriers, the theoretical domain constructs

(knowledge, skills, beliefs about capabilities, consequences) further highlight the related constructs to these domains (Cane et al, 2012).

4.3.1 Understanding behaviour in a context

The study aimed to understand diet and physical activity behaviour in ethnic bus driver's workplace. Diet and physical activity behaviour needs to be understood in a context if we want to be able to design effective theoretical based interventions. This is suggested by NICE guidelines for behaviour change at population and community levels (2007) as well as Dahlgren and Whitehead (1991) suggesting that behaviour is best understood within the context it occurs. Heath, Parra, Sarmiento et al. (2012) recommend the informational approaches of community-wide and mass media campaigns, and short physical activity messages targeting key community sites. They further suggest that behavioural and social approaches are effective, introducing social support for physical activity within communities and worksites. Recommended environmental and policy approaches include creation and improvement of access for physical activity with informational outreach activities. These approaches lead to adequate increases in physical activity among people of various ages, and from different social groups, countries, and communities (Health, Parra, Sarmiento, 2012).

Even though diet can be improved through interventions at the workplace, there are no systematic approaches on how to adopt this (Quintiliani, Poulsen, Sorensen, 2010). Previous frameworks have attempted to understand this. For example, MINDSPACE (2010), which has been criticised for not including all the relevant intervention types and merely being a list of modes of delivery lacking coherence (Michie et al, 2011). Another example is the Cochrane Effective Practice and Organisation of Care Review

Group (EPOC)'s 2010 taxonomy aiming to categories interventions to change health professional behaviour, but this has been subject to criticism due to the broad nature and mixture of the categories (Michie et al, 2011). The principles of 'nudge' (Thaler & Sunstein, 2008) have been criticised for lack of evidence to support behaviour change through subtle environmental restructuring, some incentivisation and forms of subtle persuasion (Michie et al, 2011).

These models have attempted to understand behaviour within a context – yet they lack clarification on the 'nature of the behaviour'. The importance of clarifying the nature of the behaviour, prior to intervention development has been suggested previously (Fishbein, Triandis, Kanfer et al, 2001; Michie et al, 2011; Michie, Ashford, Sniehotta et al, 2011). The current study contributes to understanding the nature of 'diet and physical activity behaviour' within in a specific workplace context and a specific population. Amongst others, it has identified factors, such as the role of cultural factors and the subjective experiences of migration in relation to diet and physical activity, how the diversity in health beliefs and perceptions comes into play with behaviour, as well as the influences of the external work environment which spill over to behaviour.

The importance of understanding the psychological processes to understand behaviour has been suggested (Michie, Johnston, Abraham et al, 2005), and the categories identified (see results section) aid understanding in the underlying process in relation to diet and physical activity in a workplace context). The factors (psychological, environmental, and cultural) and the complexity have been explored. Its findings add knowledge to the factors of influence, which can be used to identify the relevant/or new behaviour change techniques to be used in intervention development.

Some of the categories of the current study can be related to the theoretical constructs of different previous models as proposed above. Each of these models has unique aspects. For example, the HBM's perceived threat construct differs from constructs in the TPB and TTM. Furthermore, it supposedly also includes 'objective' demographic and variables such as cues to action, which are not found in specifications of other models. It can be argued that the HBM is relatively more focused than the TPB; which is attained at a higher level of generalisation (Ajzen, 1988). The TPB also contains constructs similar to 'control' beliefs and self-efficacy (Ajzen, 2002). The models which are employed to predict and change behaviour contain a wide variety of constructs. The literature suggests that there are overlapping constructs between the different models (Fishbein et al, 2001; Michie et al; 2011; Cane et al, 2012; Michie & Johnston 2012).

One important factor to note is that none of these models (HBM, TTM, and TPB) specifically incorporates or interprets the significance of the social, environmental and ethnic/cultural factors. These models address individual's responses rather than the influence of the environment on their behaviour. The sub categories (see table 3a) identified in this study have not all been addressed in previous models, although there is an overlap. The findings of this study suggest that the environment and the role of culture play a significant influence on diet and physical activity behaviour in the workplace. Reviews which have addressed environmental changes in the workplace indicate that environmental changes can influence dietary behaviour (Engbers et al, 2005), and physical activity programmes with bus drivers have shown some

improvement in health (Zavanella et al, 2012). A recent review (Geaney et al, 2013) evaluated the effectiveness of a workplace dietary interventions with nutrition education on employees dietary behavior, health status, self-efficacy, perceived health, determinants of food choice , nutrition knowledge, co-worker support , job satisfaction through six studies which met the selection criteria and concluded that there is limited evidence which suggests that workplace dietary change interventions alone and in combination with nutrition education increase fruit and vegetable intake. This study was not specified for bus drivers however.

Despite the vast application of the above psychological models to understand and predict behaviour in behaviour change literature, the evidence on bus drivers or workplace health with a high ethnic diversity has remotely applied these models. Previous research also indicates that there is insufficient evidence on theoretical based interventions addressing diet and physical activity in a workplace context (Plotnikoff et al, 2004; Engbers et al, 2005). One of the few studies applying a behavioural model assesses the constructs of health belief model (self-efficacy) and stage of change in relation to health (Kim & Hwang, 2012). This study illustrates that group based education programmes for cardiovascular disease (CVD) prevention are effective in increasing knowledge stage of change, and health behaviour to prevent CVD among male bus drivers. The study's limitations lie in the absence of not considering the influence of the environmental factors which play a role on the physical activity behaviour.

This calls for using frameworks which not only have the capacity to address several layers of influence such as the rainbow model proposed by Dahlgren and Whitehead (1991), but also have a clear and transparent method of choosing intervention components to address the relevant psychological and environmental factors identified. It should have the capacity to assist in designing theory based interventions to suit a particular context and environment, taking into account the particular population. The importance of theory based interventions is suggested to due complex nature of behaviour change, and the significant value health psychology models can contribute to understanding this. Theory can assist in the understanding of which theoretical constructs best explain or predict behaviour, which can assist intervention development to focus on factors which are central to behaviour change.

Secondly, theory can assist in identifying effective methods for change and guide how change can come about. And finally, theory can assist in why change has occurred, which can further assist in elimination of less relevant components of the intervention. Identification of effective theoretically derived techniques can further assist interventions designed to increase physical activity and healthy diet (Michie, Abraham, Whittington et al, 2009).

More so, although recent literature suggests that intervening at several levels can bring positive outcomes as mentioned above, there is a need for a framework which can direct the development, delivery, implementation and evaluation of these interventions at the workplace. The importance of the environment and context is considered essential in addressing behaviour change and it is therefore suggested that multi-level and complex

interventions should be developed with recommended guidelines, workplace characteristics, long term follow up and objective outcomes for diet, health and cost.

We can draw on the behaviour change wheel (Michie et al, 2011) and theoretical domains framework (Cane et al, 2012) but, the notion of cultural influence is suggested to be accounted for. For example, the theoretical domains to address the capability, motivation and opportunity components of the COM-B model can be assessed through the defined domains (Cane et al, 2012).The construct of 'opportunity' is related to social influences, environmental context and resources. The factors identified in this study can further assist in identifying the appropriate behaviour change techniques with respect to ethnic and cultural related influences. Furthermore, the environmental context and resources domain may need to address workplace influences (e.g. such as irregular work hours) identified in this current study when designing interventions.

There are some issues for consideration nonetheless. Workplaces, such as the one under investigation are often faced with limited resources, and constraints. Even though developing theory based interventions are useful (Munir, Kalawsky, Wallis et al, 2013) it is also a time consuming process (Kwak, Kremers , Werkman, 2007; Wolfers , Hoek, Brug et al 2007; Fernandez, Gonzales, Tortolero-Luna,et al 2005). MchEachan, Lawton, Jackson et al (2008; 2011) developed an intervention for workplaces, using intervention mapping and found that most successful techniques to change physical activity in the workplace are 1) social support/social change, 2) prompting intention formation, 3) providing instruction, 4) providing opportunities for social comparison, 5) prompting self-monitoring, and 6) prompting barrier identification. When they tested

the physical activity intervention at the workplace, they found mixed support. The study used different workplaces to implement the intervention. These were Bus Company; Hospital; Local Government Council; National Government Organization; University. There were 4 worksites in total for the bus company. One possible explanation for the mixed support may have been because some workplaces responded better to the intervention than others, due to the variation in for example, level of education, income, social status etc. Furthermore, even though MchEachan, Lawton, Jackson et al (2008; 2011) found relevant behaviour change techniques in relation to physical activity interventions, at the workplace, the participants were predominantly 'white British'. An ethnically diverse population may respond to other techniques or the techniques may have to be modified to fit accordingly.

Workplaces vary vastly and interventions at bus company's may be more effective if they are developed taking into account the cultural influence as a result of ethnicity and migration, bus drivers health perceptions and beliefs in relation to their own competence and ability. Parallel to this, interventions may benefit from addressing the environmental structures which hamper the opportunities to change.

4.4 Study Implications

On the basis of the findings, a number of implications will be highlighted at the individual and environmental level.

1. This study indicates that bus drivers strive to maintain a sense of psychological balance in their everyday work life. Their striving for balance is a result of high demands, reduced control, a sense of learned helpless.

2. This study indicates that bus driver's health perceptions are a formation of different constructs which spread over two dimensions. Namely holistic views and absence of disease.
    a. The absence of disease dimension was more apparent in the migrant interviews.
        i. Migrants also expressed that their earlier experiences and state of self-perceived health (pre-migration) was considered to be better compared to current. The 'accepted' declining state of health could be due to several reasons.
        ii. They perceive health as a 'capital' which reduces over time – this is perceived as acceptable.
        iii. Religious faith played an important role in both dimensions of health perceptions for migrant participant.
        iv. The experience of migration plays an important role on participants health related perceptions and beliefs and has an influence on diet and physical activity behaviour.

    b. Significant others had a key influence on migrants 'way of life' in relation to health. This was not very apparent in the Danish interviews.
        i. Migrant participants' beliefs in relation to diet and physical activity appeared to be highly influenced by significant others (these were often parents, teachers etc.) and advice from these sources were viewed as 'golden advice'.

ii. There is vast amount of health information nowadays, however migrants beliefs and ‘golden advice’ received from a pre-migration context are deeper rooted, and appear to have remained constant. However this is not to exclude that they are not aware of health information. From the pre-migration context, earlier experiences have played a significant role in preferences with respect to diet and physical activity.

iii. There was also diversity in relation to health related knowledge. Some expressed a lack of general health related knowledge. Migrant participants displayed a stronger need for ‘adjusting’ (rather than changing entirely) their preferred diet, so it was healthier.

c. Health behaviour needs to be understood within a context:

i. To gain a further ‘realistic’ understanding of diet and physical activity behaviour.

ii. The results of this study highlight that individuals engage in momentary wants and needs with respect to health behaviours (diet and physical activity). Further research is needed.

iii. These are influenced by several constructs highlighted in the results as well as deeper rooted cultural beliefs for migrants.

d. The workplace is a highly influential setting which can either hamper or enhance opportunities for diet and physical activity behaviour.

i. Bus drivers experience lack of autonomy and a sense of learned helplessness – these needs to be addressed in workplace initiatives.
ii. This study draws inferences that there is a spill-over effect. Lack of autonomy and control in the workplace 'spills over' to a reduced autonomy and control in relation to health behaviour in their everyday context.

4.5 Study Limitations

Even though we can draw some reasonable arguments towards the influences of the individual, contextual on health in this population, there are nonetheless some limitations to this study.

4.5.1 Methodology used

This study is not exhaustive in any way, and the willingness of only a small number of participants to take part in the study introduces a selection bias, which may have an impact on some of the findings of the study. Future research studies should try and employ different innovative strategies for recruiting participants, taking into account the challenges outlined earlier in relation to participation with this particular group.

The use of contextual observations brings with it a degree of 'observer bias' where objective reliability is a key criticism. Yet it can be argued in order to understand the way a work environment influences health and well-being, there is a need for an observational component in the methodology applied. This type of investigations

requires to adopt methodologies which can guide the process for ‘depth’ rather than breadth (Blaxter, Hughes and Tight, 1996) in addition to aiming to understand health behaviour in a unified way rather than separate, independent and unrelated features. In order to understand the natural process, ways of our everyday living, there is a need to adopt methods which allow embracing the wider aspects of influences which play a role in our daily lives. The use of this has allowed for a closer understanding of understanding ‘why we do what we do’ where psychological determinants particularly motivation is the point of departure.

Having used semi-structured interviews, followed by the use of grounded theory has allowed for an introspective nature of analysis, where relations and links between the different categories and sub-categories have been identified. This was an explorative process to study the links and relations between the contextual environment and individuals.

4.5.2 Applicability and generalizability of findings

Even though some of the findings are consistent with previous research, they cannot be extended to the wider population, both with respect to ethnic migrant workers, nor bus drivers in general – yet it provides some very useful insights into specific areas.

Even though differences in health perceptions were apparent as a result of difference in culture and ethnic background between the Danes and ethnic migrant participants, further studies of inductive nature are needed to verify these. It is possible that migration plays a key role in the difference in addition to other factors outlined earlier, yet it cannot be said with confirmation.

It was not possible to draw inferences between the four groups, but the Danish and migrant participants as two groups. This can provide implications to the importance of investigating the role of migration experience with respect to health behaviour and health in general.

Although migrant participants had experienced migration from a non-western country and shared some similarities (role in the family, religious faith, migration from a non-western country), there was a difference within each ethnic group with respect to how long they had stayed in Denmark as the Turkish participants had lived in Denmark for the longest (average thirty five years) compared to Pakistani (average seventeen years) and Somali participants (average fifteen years), and this could reflect their self-perceived health and health behaviours, yet this was not found.

The findings can support the development of interventions which aim to intervene at the individual as well as the environmental context of a workplace. The frameworks illustrate the interaction between the individual and environment. In order to develop a more refined understanding, further research is needed.

Even though, to some extent it remains true that having a small number of participants cannot adequately support the claims of having achieved valid conclusions – yet they allow investigating aspects such as inductive and deep analysis which are not feasible, cost-effective nor practical to study in larger studies aiming to quantify findings.

4.6 Recommendations for practice & research

4.6.1 Research

The findings from the current study are worth investigating and validating in future studies.

A further account of differences in health perception ('absence of disease' and 'holistic health') with ethnic minorities and Danes could enhance our understanding of the health beliefs and perceptions related to behaviour to assist further in intervention development.

A closer investigation of the relation between 'spill-over' effect between the job type and empowerment is needed. Bus operators and researchers should work in close collaboration to identify strategies for enhancing empowerment as a fundamental aspect, as well as identify and understand how empowerment and control can be integrated as a key component to be employed for bus drivers. Similar to previous research (Poulsen, 2004; Poulsen et al, 2007) a participatory approach where relevant stakeholders are engaged in the processes for change, as well as the development of interventions is suggested. It is unclear to what extent bus operators have access to research findings; a variety of methods for disseminating research findings is suggested.

Since an explorative approach to study diet and exercise was adopted using semi-structured interviews, future studies could focus on understanding the psychological determinants of diet and exercise behaviour in a similar workplace setting. This could contribute to understanding the interplay between psychological determinants and job structures of similar kind.

The use of structured interviews can allow for a less explorative approach and add to the current knowledge with respect to the different components presented in the frameworks. This could contribute to the (1) a more concrete understanding of changing behaviour whilst embracing several layers of influence (individual, contextual and cultural) (2) development of health related initiatives in the workplace and the evaluation of these.

Even though the current study has identified factors at the individual as well as the environmental level which hamper motivation and competence to improve physical activity and adopt a healthier diet, further research using different methods could enlighten this further. This will allow developing tailored contextual based interventions focusing on changing conditions to enhance individual motivations to stimulate behaviour change. Although the application of BCW (Michie et al, Cane et al, 2012) or alike is suggested, no studies have researched this further. There is a need to investigate the relation (both direct and indirect) between bus driver's motivation (the 'ways' in which bus drivers engage in physical and diet behaviours) and their everyday contextual environment

4.6.2 Practice

4.6.2.1 Empowerment and autonomy

Bus companies are recommended to address basic needs which have been outlined earlier. If these would be fulfilled, at least to an extent, it would hold the potential for reducing the sense of learned helplessness, enhancing autonomy and increasing

perceived control. Furthermore, it will have positive effects on health and well-being (Lynch, Plant, & Ryan, 2005) and can increase motivation (Gagne 2003; Richer, Blanchard, & Vallerand, 2002) in bus drivers to change behaviour in an empowered way.

Empowerment can have significantly positive outcome on one's health (Wallerstein, 1992; Minkler, 2010). It can also allow for enhanced control. Examples could be providing opportunities for skill utilisation, attractive career opportunities (de Lange et al, 2008).

Since bus drivers are highly vulnerable to abuse and mistreatment – conflict resolution training can empower to effectively manage stressful situations. Providing conditions and an environment where bus drivers can thrive and increase autonomy will provide potential for health behaviour change and overall wellbeing. If opportunities are provided to satisfy the basic human and universal needs of competence, autonomy and unlearn helplessness, bus drivers can become empowered in their everyday work life and take control rather than being controlled and bound in a structure which limits opportunities to change health related behaviour.

Seeing this is the light of the COM-B model (Michie et al, 2011) has been considered appropriate as the present study also found the need to address capability, opportunity and motivation before behaviour change can occur.

4.6.2.2 Practical opportunities

Following on from addressing, empowerment and autonomy, this study also recommends providing availability and access for bus drivers to purchase a healthier diet (vending machines etc.) and opportunities to engage in physical activity (training facilities at local garages etc.). Previous research documents the positive health outcomes of this (Ragland et al, 1998a). However, interventions targeted towards empowerment and increased perceived control is recommended as initial health enhancing strategy.

4.6.2.3 Need to address diversity

Furthermore, in a workplace which consists of an ethnically diverse workforce, there is a need to address the cultural diversity present. This would entail an understanding of the diverse sets of skills, knowledge and beliefs. In workplaces where there are a high number of employees with a migration experience, there might not need to account for the deeper rooted cultural influences on health as such, yet accounting for their skill-set, knowledge and beliefs is important nonetheless.

The cultural influences are most often too deep that traditional behaviour change interventions fail to address (Dickinson & Bhatt, 1994; Netto et al, 2010). When interventions take into account the health perceptions of individuals, they open up to the possibility of gaining an insight into the wider paradigm of their self-perceived health, how they perceive certain barriers in regards to improving health. This can significantly contribute to developing tailored interventions.

It is recommended that interventions target to change people's attitudes, beliefs and behaviour through tailoring interventions where the entire responsibility to change does not solely lie with the individual, but where the basic needs are met. It can be argued that in a setting such as the bus company, where participants experience a high level of loss of control and the learned helplessness – if interventions targeted towards the environment and organisational level, there is an increased likelihood of being motivated to change health behaviour.

4.6.2.4 Multi-level interventions needed

Research also documents the need to target the contextual features and intervening at multiple levels to improve health outcomes (Dahlgren & Whitehead, 1991; Adler et al., 2008; Koh et al., 2010; Michie et al, 2011).

Taking the above into account, workplaces could benefit from broad intervention structures through a systematic and sustained approach. The current study should be understood in the light of a need to intervene at several levels at a workplace which has similar characteristics. A framework where several levels are taken into account as well as the interplay between the different levels will enhance the likelihood for health behaviour change and provide grounds for sustainable health outcomes. An example of a framework which can capture this is the behaviour change wheel and the theoretical domains framework (Michie, Johnston and Abraham et al, 2004; Michie et al, 2011, Cane et al, 2012; French et al, 2012). This can assist in a clarification on how the different levels influence behaviour. The application of this holds potential to guide workplaces in developing consistent, replicable and systematic interventions.

Due to the nature of the job as a bus driver, it is recommended that the interventions are targeted where outcomes have a key focus on autonomy, unlearning learned helplessness and empowerment. Whether this would require intervention at an organisation level (changing structures), environmental (providing opportunities for physical activity and uptake of healthy diet at the workplace) or individual level is relatively unclear. However, the application of the BCW and theoretical domains framework may be able to guide this.

The present study's framework illustrates that there is a need to broaden our thinking and integrate individual level efforts with the environment and context of the workplace to promote improved health and well-being. A multi-dimensional framework encompassing such characteristics holds potential to improve the overall health of work force.

The process through which multi-level interventions implemented and evaluated are thus just as important as the content of the interventions. Due to the perceived workplace influences (perceived lack of control) on health behaviour, it is suggested that participatory methods should allow positive outcome for bus drivers and employers. This process would ideally intervene at several levels, and thus a participatory approach to intervention is recommended due to two particular reasons. (1) It will allow employees to perceive a sense of ownership which would, theoretically have a spill-over effect, thus enhancing autonomy and reducing perceived lack of control. (2) Due to the deeper rooted cultural influences present as a result of a diverse workforce, a tailored approach would be effectively tailored if a participatory approach

is applied as the participants will be active participants in the process themselves. Furthermore, participatory approaches may allow room for achieving empowering effects.

4.7 Conclusion

The present study aimed to shed light on factors which play a key role in diet and exercise behaviour for migrant and Danish bus drivers in a workplace setting, by examining how these health behaviours are integrated in an everyday work context. The aim was to (a) develop a framework to illustrate how the individual, contextual and cultural influences on health behaviour (diet and physical activity) interplay in an everyday perspective (b) To highlight how this can inform our understanding of diet and physical activity as an integrated part of our everyday behaviour and (c) to indicate how we can utilise this in developing and implementing health related initiatives in the workplace.

The results of the study indicate that meanings of health rests on two dimensions – namely 'holistic views' and 'absence of disease' related perceptions. Each was a make-up of different aspects. Through balancing these aspects, the employees achieved a sense of equilibrium. 'Absence of disease' perceptions were more apparent with migrant participants, than Danish participants. A perceived health decline as a result of migration was experienced by migrant participants.

The psychological processes which guide diet and physical activity behaviour in an environmental context illustrate the links between the individual and the environment – where cultural influences and health perceptions play an implicit role in an everyday.

Through a process of self-perceived equilibrium, balance maintenance in an everyday context was found to be central.

The contextual environment for bus drivers brings with it a sense of learned helplessness, and lack of autonomy and perceived lack of control due to the nature of their job. This was found to have a spill-over effect on their health behaviours. Workplaces must assume greater responsibility in overcoming environmental influences that hinder bus drivers from becoming more physically healthy.

This study adds to the research pointing at that not only is there a need to take into account the context in which humans live, but also take account of how the experience in one environmental context are carried on to the following context. There is a need to further address the interplay between the individual psychological factors and the work environment.

The frameworks in the present study capturing individual, cultural and contextual factors and their relations point towards a need for workplaces to intervene at several levels through a systematic and consistent way to improve the health of the workforce.

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Appendices

Appendix I

Interview topic guide

Time	
	Introduction – name and purpose of research. What is the aim of the interview, research interest, consent, confidentiality. Ice-breaker: Tell me about your life...where did you grow up, living conditions, children/married/unmarried? What have you done before (job)? There are three areas which I want to talk to you about today: • How you feel about (your) health • Health behaviours (diet and exercise etc.) • The role/influence of your cultural background 1) <u>First topic is how you feel about (your) health:</u> What is (good) health for you?/What is a healthy lifestyle? (probes: physical health, psychological well-being, social aspects) What is most important for you regarding your health? What do you prioritise in your health? Do you feel that you are healthy (probe: exercise?) Do you experience any problems with your health (state of health)? What kind? How could your health be improved? Do you feel that you are at risk for getting ill/a certain condition? Why? What illness/condition? What do you do/Is there anything that you do in your everyday which is good for your health? Would you want to do more of that? How would you do/plan that? What do you do in your everyday which is bad for your health? (i.e. do you smoke?). Would you like to change that/certain behaviour? Have you tried changing it before? Have you/have you not been able to go through this fully? Why? What prevents you from changing it now?
25	<u>2)</u>Health behaviours: What kind of food do you like? Traditional food from your culture/Danish/other? What? What do you like to drink? Traditional drinks from your culture/Danish/other? What? Is that because it tastes nice? Or because it is healthy? Both? Do you see/Is there a relation between healthy diet and good/tasty diet (your diet)? What kind of physical activity do you take part in (if you do)? If you exercise: Why? (probes: to maintain a healthy lifestyle? For leisure/enjoyment/play?, to

	socialise?) If you don't do any physical activity: What would you want to do? What prevents you? 3) The role of ethnic background and culture on health:
45	Are there any specific elements of your cultural background which you believe might have relevant meaning in regards to maintaining health? How much focus is there in your culture in maintaining a healthy lifestyle? What norms do you follow which you feel are part of your culture in following a healthy lifestyle? How important are these for you? In what ways? Is there anything in particular at your workplace (taking into account your health behaviours) Which makes it easier to maintain a healthy lifestyle? (general) Which makes it difficult to maintain a healthy lifestyle? (general) Are there any particular norms which you would like to follow which are difficult to follow at [redacted] (probe: particular diet, particular kind of physical activity)? - Are there any norms which [redacted] supports/are easier to follow at this workplace? Is there anything in relation to [redacted] which makes it difficult for you to follow your norms in order to live a healthy lifestyle (probes: long work hours,
65	canteen, and lack of facilities.

Appendix II

Consent Form

Participation in interview
Health of bus drivers

The answers and audio recording will only be used for research and will be treated with full confidentiality. No other than the researchers will find out what you have answered - not even your workplace. The results of the research will used in scientific papers and reports.

The Danish Data Protection Agency has approved the study and has established certain procedures/conditions for the project.

It is voluntary to join and you can choose to withdraw at any time.

By signing this form you agree to participate.

Your name (please use block letters): _____

National ID number: _____

Signature and date: _____

Phone number where we can contact you: _____

E-mail: _____

Thank you for your participation
[Translated from Danish to English]

Sonia Zafar [redacted]

Appendix III

Please fill in the following details

Year of birth:

Sex (male/female)?

How many years have you lived in Denmark?

What is your ethnic origin?

How many years have you been in this occupation?

<u>Vocational Education & Training (VET)</u>
(Please tick)

a. None

b. Upto 3 years

c. Vocational College (technical college etc.)

d. Undergraduate

e. Post graduate (4 years +)

Please state

f. Any other education?
Please state

g. Still pursuing education	
h. How tall are you?	**…….cm**
i. How much do you weigh	**…….....kg**

Thank you

SECTION C

Professional practice

Generic Professional Competence

Unit 1

Working in a Clinical Setting (London) & a Research Centre (Copenhagen)

Working in a Clinical Setting & a Research Centre

For the initial two years of the doctorate I was working as a health psychologist (in training)/smoking cessation specialist at a London-based NHS trust hospital. The purpose of the role was to lead the hospital-based stop smoking interventions through the application of evidence-based public health approaches, and to provide advice and support to inpatients, outpatients and staff members. I was also responsible for providing intensive support to hard-to-reach and high-risk (cardiology and respiratory patients, pregnant women and their partners who smoke) clients. The intensive treatment consisted of a minimum of twelve weeks of behaviour modification counselling and individualised pharmacotherapy provided to each patient/client. Smoking status with all clients was confirmed biochemically (i.e. by measuring expired carbon monoxide). Some of my key responsibilities were to contribute to the development of strategic and operational public health in relation to smoking cessation. During this period I also undertook the opportunity to provide teaching and training to healthcare professionals on several aspects such as smoking cessation, skills and competencies as an advisor, and integration of smoking cessation work within their current roles.

Following my clinical experience in the NHS, I started working as a Researcher in the Disease Prevention Team at a Research Centre (within ‘diabetes care’) in Denmark. My role here was to conduct a research study, in an effort to better understand health behaviours in a low-skilled workforce with an increased focused on three ethnic minority (Turkish, Somali and Pakistani) groups.

I also joined “Life Line” as a volunteer to keep abreast of client contact and to continuously improve my skills in advising. This organisation works towards prevention of suicide by campaigning to raise awareness of the issue. Furthermore, it provides anonymous support (through online support and telephone support) to individuals with suicidal thoughts, relatives and survivors. My role was to provide online support to this client group.

As a member of the British Psychological Society (BPS), as well as a member of the Danish Psychological Association and a doctoral student (amongst other roles taken on during the training), I am encouraged to remain conscious of four primary ethical aspects. These are competence, respect, integrity and responsibility (BPS Code of Ethics and Conduct, 2006; Ethical Principles for Nordic Psychologists, 2010). I consciously applied these and was aware of them throughout my years under the professional training when liaising with fellow colleagues, clients, patients, and supervisors.

My training years have provided me with interesting, and challenging opportunities, both in practice and in research. I have had opportunities to enhance and develop my skills as a health psychologist. This report will provide an outline of how my generic professional skills have developed whilst undertaking the Professional Health Psychology Doctorate.

1.1 Implement and maintain systems for legal, ethical and professional standards in applied psychology

The following sub sections aim to provide a detail account of how the supervised practice has established the generic professional competence. Ethnical and professional standards were implemented, maintained and managed throughout my training period. As I was responsible for confidential patient data, this required me to establish, maintain and review how patient data can be securely stored.

During the development of the Stop Smoking Service 'Make Another Positive Decision', I developed referral pathways and procedures through which patients could be identified. After referrals were received from maternity departments, patient details were recorded in a secure database and in the Electronic Patient Records so they were retrievable in the future. Once referrals were received from the Antenatal clinics (as well as from other maternity clinics), patient details were recorded in a database. This database was password protected and only the programme manager, data administrator and I had access to it. Hard copies of patient details were kept secure and safe at all times through the use of a locker, to which only the data administrator had access.

Furthermore, when seeing clients I ensured that their personal details (age, gender, date of birth, address, etc.) were entered into a database, to avoid misplacing person-identifiable data. All the details from the monitoring forms were entered into a database and were kept secured in the department. These procedures of ethics, professionalism and legal aspects were outlined in the job description, and keeping in line with these was therefore very feasible.

During my ethics approval stage for my DPsych thesis, I ensured that I applied all relevant ethical aspects to the research. Initially, this was somewhat different to ethics approval in the United Kingdom. In Denmark, I needed to register my research study with the Danish Data Protection Agency, and submit an application under the Data Protection Act (Act No. 429 of 31 May 2000). The Data Protection Agency approved the study and so I was able to collect my data. I therefore did not require ethics approval from City University.

During the data collection stage I gained written consent from all participants who took part in the research study, and the consent forms have been kept secure. All participants were informed that they would be un-identifiable, and assured of confidentiality during the data collection process. Consent was provided by participants in order for the data to be used for research purposes.

The data collected was made anonymous so that participants were no longer identifiable. During the analytical process, a coding system was used to identify participants.

In the upcoming projects at my current workplace I aim to implement and maintain the standards that I have learnt through experience whilst working in a hospital-based setting as well as in a research centre.

With regards to evaluation of my competencies as a trainee health psychologist at an NHS organisation, my professional standards were evaluated quarterly through my

supervisors and managers' feedback and continuous personal performance reviews. This performance evaluation was based on number of clients accessing the service, setting a quit date, rate of people successfully quitting smoking (outcome at 4 weeks based on self-report and carbon monoxide reading), and promotion of the specialist service and uptake of the service and training of healthcare professionals. My supervisor also continuously provided feedback on my progress and how I could improve as well as activities I should take part in to enhance my competencies as a trainee psychologist. Feedback on progress was also received at the Annual Review workshop at the University. The importance of evaluation of one's work enhanced my motivation to produce work of high quality, and continuously progress.

I was also involved in ensuring professional practice (through continuous smoking cessation training) for midwives and midwife care assistants. Whilst directing the implementation of interventions, I also ensured that new staff were supervised in implementing and directing the behaviour change interventions with pregnant clients and their partners. I was able to support them in the implementation process and supervise them when they faced challenges, or needed further guidance.

1.2 Contribute to the continuing development of self as a professional applied psychologist

Reflecting back at when I started in my first trainee role in the NHS, I can see a journey with a number of accomplishments as well as challenges. When I first started my role in Public Health I found it very challenging to view myself as a trainee health

psychologist. This was possibly due to me not having clinical experience in the past as well as not having worked in a setting with health psychologists previously.

Over the years I had established and embraced several opportunities and implemented processes where I could develop myself as a professional applied psychologist. I attended a number of training courses (through both the university and the NHS). These courses gave me the opportunity to improve my practice and knowledge, which has assisted my professional skills. They have enhanced my skills and competencies in various areas – both in an applied setting and in a research environment. I have also improved greatly on eliciting and evaluating the knowledge to inform practice. I found this part of my training stimulating, i.e. critically evaluating information and tallying this with previous knowledge, then using this process to create best practice implementation to meet best practice benchmarks. I also had the opportunity to evaluate and improve these processes whilst working in public health department.

During my work in the NHS I continuously developed and implemented theory-based interventions. In my work with clients I aimed to use applied psychological methods in various ways, e.g. motivational interviewing skills in smoking cessation clinics and/or cognitive behaviour therapies.

I attended all the obligatory and recommended DPsych workshops at City University during the course of my training years (Supervision Planning and Professional Development, Consultancy Skills, CBT Skills for Health Psychologists, Psychometrics for Health Psychologists, Generic Professional Group Supervision, Developing a

Therapeutic Relationship, Case Formulation¸ Supervision planning and Professional Development, Systematic Review, Research, Design and Ethics, Social Marketing, Delivering Teaching and Training, Counselling Skills for Health Psychologists, and Critical Health Psychology).

The training I attended during my work in the NHS was highly practice-orientated (Level 2 Smoking Cessation, Training the Trainers course (2008), Setting up and running smoking cessation clinics, Annual Smoking Cessation Training and Research Programme (SCTRP) supervision, Face-to-Face Motivational Interviewing, Low Birth Weight Seminar (2009) – these helped enrich my skills as an advisor and a trainee health psychologist.

My skills as a practitioner improved through attending various seminars: Smoking in pregnancy Pan London network at The Royal College of Midwives, London (2007), Pregnancy Network Meetings, Gaining Ethical Approval for Research, Consultation event - "Tobacco control: the next steps" Planning event in preparation for the Government consultation, PGD Varenicline Launch, Social Marketing Training, Pregnancy pan network, Cannabis Study Day (2008), Life-Line Module I-V (2010), Psychological Treatment of Sleep Problems - Seminar organised by the Division of Danish Health Psychology Society, Seminar for Research Network for Ethnic Minority Health (2011), and the European Public Health Conference (EUPHA) Conference, Denmark (2011).

I was also an invited speaker at a Danish research and patient support institution [redacted]. The aim of this session was to discuss and present my work from the NHS and share the experiences. Whilst in Denmark, I led a debate on the potential use of my work. This was a great opportunity to get an insight into the legislation and research focus on smoking cessation in another context.

Together with a colleague from City University, I had organised a seminar 'Healthy Journeys workshop 2011' in London (City University) to allow an opportunity for cross-collaboration between the two institutions (Steno Health Promotion Center and City University). The central theme of this two-day workshop was transport professionals' health.

Attending conferences and seminars, and networking allowed me to stay up-to-date with the research which helped to inform, evaluate and improve practice. Enhancing knowledge and experience through attending seminars and lectures on various areas of my work was an additional approach to develop myself as a professional applied psychologist.

Over the years I also attended several conferences to stay abreast of public health concerns, and to further take part in networking opportunities. I presented some of my work (both practice and research) at three key conferences (UK National Smoking Cessation Conference (2009), London Annual Tobacco Control Conference (2009), and Annual Division of Health Psychology Conference (Southampton University, 2011),

and attended a number of other conferences for consultation and discussion/debate on current research.

These opportunities enhanced my presentation skills, and I experienced being integrated with the academic community. I have incorporated best practice in my own work as well as finding methods and means to improve myself as a professional and continuously striving to enhance the quality of my work – both in practice and research.

Whilst it was highly rewarding to gain recognition for the highest numbers of pregnant women who had quit smoking through the service I directed and implemented and it was further encouraging to see other NHS trusts developing and implementing the same model in their local stop smoking services, during the training years I experienced increased stress, which had an impact on my health. This has given me an insight into the need to maintain a healthy work-life balance (particularly within an applied profession), by recognising early signs of stress and actively seeking and accessing support.

1.3 Provide psychological advice and guidance to others

In the initial phases of my training (NHS), I worked closely with clients (who were referred as they wished to stop smoking) and healthcare staff (training on smoking cessation); at first, I lacked confidence in providing psychological advice and guidance to others. This was most likely as a result of the new healthcare system, with which I was less familiar compared to other healthcare professionals. However, my confidence gradually improved and I have become more competent and confident in providing

psychological advice and guidance to others. This happened as a result of continuous training and practice. My practice as a professional health psychologist was enhanced consistently through continuous supervision and a valuable opportunity to discuss with the healthcare staff.

I felt I became confident at a very steady rate in my practitioner role. At times when I felt 'unqualified' is when I had several clients and patients address me as 'Dr' or 'Psychologist'. I was very critical of my own ability to provide guidance but this has improved over time. I also felt that a high level of self-criticism was a barrier to improvement. In such cases I would ask my colleagues and supervisor for advice and ask for their observation of my progress.

I would approach my supervisor and continuously ask for critical feedback on my progress. I would also consult her on occasions where I was referred to as a 'Dr' etc. and ask her for feedback on my position as a trainee and how this should be addressed. This may be due to the fact that during my appointment in the NHS, I was often confronted with queries which had a psychological element. These queries were handled with care in as much as I would provide advice as well as refer to others for confirmation of my advice or for alternative advice.

On most occasions (particularly in the beginning of my training) I would reflect on the advice I had given and how I could improve, as I was aware that this was an aspect I would be facing frequently in the future (after chartership). This reflection was usually

carried out with a much more experienced advisor or nurse. I would request them to evaluate my advice and receive their feedback after observation.

As well as requesting feedback and support from others, over the years there have been several occasions where I have provided psychological advice and guidance to colleagues, as well as to other students. These varied from work-related issues to personal ones. I feel my competence has progressed and continuously improved over time.

1.4 Provide feedback to clients

During my stage two training I had several opportunities to provide feedback to several group of clients - both formally an informally. I had the opportunity to provide feedback to the maternity staff on how to communicate with, encourage and support patients in smoking cessation, and provide feedback to students studying medicine on communicating with patients about smoking cessation and importance of engaging with the patient as well as aspects of doctor-patient communication.

In addition to this, I also had the opportunity to work closely with the data management team at the hospital and provide feedback on smoking data-retrieval processes. These opportunities gave me the chance to work in different domains and evaluate the need for feedback on several fronts. I prepared the feedback based on the needs of the client and communicated it through the most appropriate methods.

Providing feedback to the data management team was often a process of working together with an applied focus on the feedback. This would be to improve the hospital's patient data collection method, and how we could effectively record data. The feedback I provided was based on several needs, e.g., which smoking data is important to retrieve and why, how and when should this be recorded, etc.

Providing feedback to some of the above mentioned healthcare professionals was a challenge, as I could clearly see gaps in the advice they had given to patients. I had to be very thoughtful regarding how to prepare and structure the feedback in such cases, as the interest for both lay in overall patient satisfaction.

At times I also provided feedback during the training sessions I delivered. This was often in an informal way as the needs were expressed during the question and answer session towards the end of the training. Many trainees requested feedback on some of the challenges they face when implementing behaviour change interventions with patients.

A number of theoretical perspectives have been relevant and have provided a useful learning experience when delivering training, for example 'The Stages of Change Model' (Prochaska & DiClemente, 1982), motivational interviewing (Rollnick, Miller & Christopher, 2008; Miller & Rollnick, 1995) and cognitive behaviour therapy skills (Beck, 1995) were particularly applicable in practice, and dominated the content of smoking cessation interventions.

During my consultancy I worked very closely with professionals working in conveying health messages to the general public. In addition to other responsibilities, I would provide feedback and consultations on improving the services based on a clear focus of the aims and objectives of the consultancy.

Concluding remarks:

Multi-disciplinary work has been a key focus at the research centre, and I see the skills of health psychologists being transferable across many domains. Working in a multi-disciplinary team brings some interesting challenges such as communication and working with others who are not practitioners. This allows for improving communication skills with an audience from a different academic background. It has been very useful in assuring my own professional standing in a research setting where different perspectives of several disciplines work at a collaborative level for the same core focus, i.e. diabetes.

I still have a keen interest in patient groups, and developing, directing and implementing behaviour changes through theoretical-based interventions, through the use of therapeutic skills and work within applied research, i.e. developing tools to enhance patient quality of life. As a trainee health psychologist I have also developed an interest in collaborating with different academic perspectives, which permits me to take a keen interest in research for preventing diabetes in high-risk populations and ethnic groups which are at an increased risk of developing Type II diabetes. A future where research and practice go collaboratively, hand in hand, will form the direction of my professional career.

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SECTION C

Professional Practice

Consultancy competence

Unit 3

Addressing a Health Inequality Gap – through practice

Addressing a Health Inequality Gap - Through Practice

3.1 Assessment of requests for Consultancy

Cigarette smoking remains one of the few preventable factors that are associated with complications in pregnancy, low birth weight, pre-term birth, and has long-term health implications. In relation to health inequalities, research documents that smoking is decreasing in high-income countries and increasing in low and middle income countries. Smoking in pregnancy is further associated with low socioeconomic status, poor social support and psychological distress (Lumley et al., 2009; Werler, Pober & Holmes, 2005; Shane 2002; Ashmead, 2003; Lawrence & Haslam, 2007; Cnattingius, 2004). Smoking in pregnancy is a UK national health priority that has been highlighted in key national documents, as has the strategic implementation needed to address this (Department of Health 2002, 2007a, 2007b, 2010, 2008). In 2001, the Government provided specific funding for work on smoking and pregnancy in order to achieve the target of a reduction in pregnant smokers from 23% to 15% by the year 2010 (Department of Health, 1998). This will mean approximately 55,000 fewer women will smoke during pregnancy. In November 2008, the Stop Smoking Programme Manager of a London Primary Care Trust (client) requested me to address a health inequality gap, aiming to reduce smoking in pregnancy and find methods on how to reach out to pregnant smokers (please see Appendix I for the request). This consultancy was based on the process-consultation model devised by Schein (1999) (see Figure 1).

3.1.1 Assessment of Client's Needs and Expectations

In order to assess the client's needs and expectations, an initial exploratory process was instigated (Schein, 1999).

One-fourth of women smoke during pregnancy and only one-third of these women give up during their pregnancy (Department of Health, 1998).

Infant mortality rates in this borough are amongst the top five nationally, and are the highest in London (Healthy Scrutiny Commission, 2007). The need of the client was to prioritise pregnant smokers, to advise and support them in quitting smoking and to contribute towards reducing the prevalence of smoking during pregnancy.

There were a very low number of referrals coming through to the Stop Smoking Service (please refer to Appendix II for referral rate 2001-2005, [redacted] Annual Review Report, 2008). I was expected to identify a suitable way to address this health inequality gap by working towards the following main objectives of the consultancy:

- To identify the needs of the diverse communities living and working in this London Borough and ensure the service activities are tailored to meet these needs.
- To develop and provide a robust referral pathway to compliment the maternity services.
- To target pregnant smokers from these diverse communities and reduce barriers to accessing the service.
- To motivate pregnant smokers to change behaviour.
- To increase referrals to ‘the specialist service’ from midwives and maternity care staff.

- To help and support pregnant smokers and their partners to change smoking behaviour.
- To contribute to the reduction in prevalence of smoking in pregnancy in this London Borough.

3.1.2 Review of literature and other sources in order to gain in-depth background knowledge to consultancy

Having thoroughly reviewed the literature and often related information to gain in-depth background knowledge, I wished to familiarise myself with the operational functions of NHS Stop Smoking Services. I achieved this by networking with Stop Smoking Services that also specialise in supporting pregnant smokers through cessation. In order to get an in-depth understanding of the needs of the diverse community and understand the demographics of the area, I stayed abreast of current cessation scientific literature, current specialist services, and national guidelines on implementation of behaviour-changing interventions. The pre-consultancy background research and preparation was carried out prior to arranging any meetings with staff from outside agencies/staff at the hospital. Being introduced by the Senior Manager and other relevant stakeholders supported the implementation of the intervention at a service level that was significantly more feasible, as it reduced many barriers such as accessing and approaching relevant staff. Full access to resources and relevant literature gave me an insight into the challenges in public health and increased my knowledge and awareness of the health inequalities in this Borough. Becoming more aware of the demographics, the health profile of people living and working in this borough assisted me in gaining a better understanding of the population’s lifestyle, risks associated with it and overall

socioeconomic status of the people in this borough. This insight guided me in making informed decisions towards which intervention strategy would be more effective. In order to work towards a higher success rate, an attempt was made to understand and gain an in-depth insight into the barriers that patients face when accessing healthcare services. In order to address the barriers effectively, there was a need to see what could be done differently using participatory methods, as the use of participatory methods would enhance the potential ownership and reduce barriers.

3.1.3 Assess feasibility of the consultancy

Schein proposes that the initial exploratory meeting is attended by someone who owns the problem and requires assistance (Schein, 1999). After reviewing the literature, a meeting with the Public Health Consultant (Lead for Maternity Services) was arranged to discuss the objectives of the consultancy. The meeting primarily focused on direction and feasibility of implementation, so a better understanding of assessing the consultancy further could be gained.

Furthermore, this was an opportunity to establish a closer understanding of the expectations regarding my involvement and an assessment of how and to what extent I could help (Schein, 1999). The support and resources available while consulting were clearly conveyed to me once the work had begun. Following this, I liaised with external professionals to discuss effective implementation and smoking cessation strategies. I wanted to discuss the strategies that were implemented taking into account the similar socio-demographics of both London boroughs. A process was initiated between the Hospital and pregnancy advisor at the neighbouring borough and myself to discuss,

develop and implement a referral pathway (please see Appendix III for a brief example of the correspondence). The availability of resources was addressed and accounted for, as well as the needs assessment. A set of recommendations was developed and presented to the client and the Senior Public Health Manager. Taking into account the resources available as well as the needs identified, I developed a set of recommendations and presented these to the client and the Senior Public Health Manager.

The financial budget of the consultancy was outlined with a breakdown of different units which was agreed upon by both managers (please see Appendix IV for financial budget).

3.2 Plan Consultancy

3.2.1 Aims and objectives of consultancy

After having identified the needs of the client, the aims and objectives for the consultancy were developed with the client.

The consultant midwife was very diligent in ensuring the implementation process was directly informed by the recommendations, and was actively involved in this project. This is consistent with Schein's (1999) recommendation that consultancy meetings should be attended by those who can influence the organisation. Through thorough consensus throughout the process of achieving the objectives of the consultancy, progress was made with the least amount of barriers and resistance. The following aims of the consultancy were identified:

- To reduce the number of pregnant smokers in this London Borough.
- Advise, support and encourage pregnant women to stop smoking.
- Reduce health inequality, increase service uptake, and reduce barriers to accessing the service.

The secondary objectives were identified as follows:

- Emphasise the importance of quitting smoking at both antenatal and postnatal stages.
- Develop and implement a robust referral pathway to ensure pregnant women who smoke are offered specialist treatment consisting of pharmacological therapy and intensive behavioural support.
- Engage healthcare professionals (particularly maternity care staff) in encouraging pregnant smokers to quit smoking.
- Provide training to midwives and healthcare staff who have direct contact with clients to ensure continuous support through their smoking cessation treatment.

3.2.2 Theoretical Framework used

Interventions with Clients: the theoretical framework which has been used for this part of the consultancy is Prochaska and DiClemente's Transtheoretical Model of health behaviour change (1982). The transtheoretical model posits that health behaviour change involves progress through six stages of change: pre-contemplation, contemplation, preparation, action, maintenance, and termination. Ten processes of change have been identified for producing progress along with decisional balance, self-

efficacy, and temptations. This model was used for client one-to-one interventions to initiate smoking behaviour change.

The figure below illustrates the ‘process Model’ applied during this consultancy:

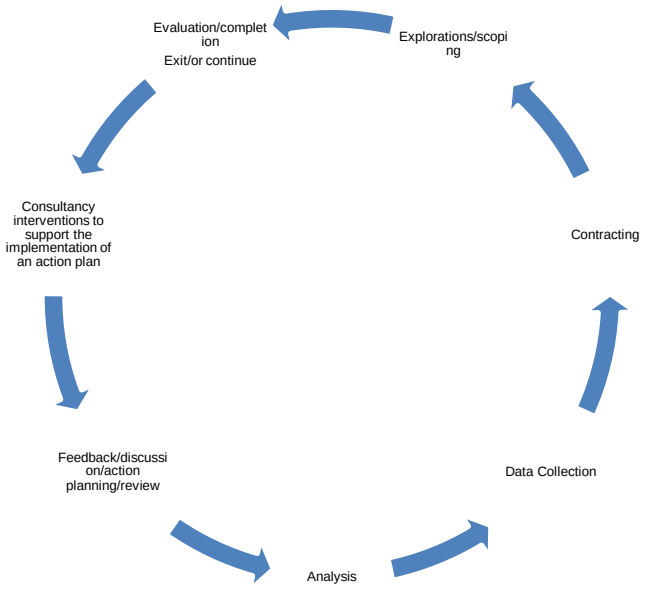

Figure 1: The Process Model, Schein (1999)

3.2.3 Implementation Plan

Analysis of items implemented as part of the consultancy:

The practical aspects of the intervention at a service level required the engagement and development of other stakeholders, alongside a service plan that outlined the implementation and overall delivery of the service. Through a participatory approach to developing a service, it was endeavoured at a fundamental level to engage stakeholders and 'potential' service users.

Initially it was required to identify and design promotional material specifically targeting this group. This included leaflets, posters, and referral forms. Following this, the plan involved launch events to promote the referral pathway and also engage media, the hospital bulletin, local newspaper, hospital radio and weekly newsletter. I also needed to have a record of how many midwives worked at the local hospital trust and primary care trust, and how many were community-based. A plan on how to engage and allow participation was prioritised at this stage. After the launch events, materials were distributed in the hospital to raise awareness of the service. To enhance the success of the project, a training schedule was developed as an integrated component of maternity care staff's professional development days (please see Appendix V for timetable for training) so they had the opportunity to receive smoking cessation training to enhance their competency in referring clients to the specialist service. My role was also to support midwives to refer clients and to assess their competency with respect to raising the issue of smoking in pregnancy and also to continuously provide training to refer clients to the service. After six months, feedback data was available from staff in order to monitor progress and for development of service improvement. The feedback received was positive, overall.

Although the timetable for the project was well within the deadline, unforeseen setbacks and delays hampered the progress of the consultancy project on several occasions.

3.3 Establish, develop and maintain working relationships with clients

I had frequent meetings with the Senior Public Health Manager and the client to identify the consultancy's progress (please refer to Appendix VI for correspondence regarding promotional material). Any changes were agreed through emails and meetings. The

material was continuously developed and improved, resulting in multiple amendments, e.g. the referral card was edited several times. The final decision was based on deliberations with the clients.

An independent design consultancy company, who work across a wide range of marketing and communications disciplines, were collaborating partners in designing and developing the materials. I collaborated with a design consultant from the consultancy company to develop the following materials, which would be used to promote the service and for patient information:

- Referral card (this would be used by staff to refer patients to the new Pregnancy Stop Smoking Service (please see Appendix VII).
- A leaflet (The leaflet includes information on Pregnancy and Smoking and would be readily available in the maternity departments) (please see Appendix VIII).
- Posters (these would be displayed in all the maternity wards in the hospital and would consist of contact details and a self-referring option) (please see Appendix IX).

As a new service was being developed, creating familiarity of it for clients was a key aspect. Clients should be able to recognise the service. Creating an image ‘logo’ would be used to address this. It would be apparent on all printed material and communications. This would provide a sense of familiarity for the target group, and support the development of an image to the public for the Pregnancy Stop Smoking Service.

Since pregnancy is an ‘open window’ to bring about a positive behaviour change, I aimed to implement the aspect ‘positive opportunity’ in the service image. There were several amendments to the image and the final version consisted of a plot line – ‘Making another positive decision’.

The client was constantly consulted and involved in the planned progress and only once consensus was achieved was material ready to be launched. The vast majority of the workload involved the wider team and me but client involvement was central to the process so as to ensure stakeholder engagement. I engaged a private company to print the patient literature. Hospitals can deliver effective information through patient literature by the patient’s bedside. Bedside folders have been used by hospitals since 1992 and were intended to replace paper-based booklets as a way of ensuring that patients, carers and visitors have comprehensive information readily available when they need it.

Previous research highlights that women smoking in pregnancy are reluctant to share their smoking status with healthcare professionals (Beenstock et al., 2012). Not all healthcare professionals are readily aware that a patient would appreciate a referral to the specialist service. I liaised with [redacted] publications to create an advertisement to deliver a message, i.e. a new bedside folder. The bedside folder helped raise awareness of the service and also the importance of quitting smoking in pregnancy. This was an additional opportunity to attract women who were in the hospital for other complications and who had yet not been referred to the specialist service at booking (please see Appendix X for the advertisement in the bedside folder).

3.4 Conduct Consultancy

Conducting the consultancy involved several stages which have been summarised below:

Explorations/scoping, Contracting, Data Collection: I had frequent meetings with the consultant midwife (CM) as she supported and directed me. Consulting her also reinforced the stop smoking work in the midwifery department. When I had difficulties accessing a team of midwives, I asked the consultant midwife to direct me. She further supported me when I was faced with difficulties regarding client's expectations (please see Appendix XI for correspondence).

Consultancy interventions to support the implementation of the action plan: I developed a detailed referral pathway outlining different roles and responsibilities for those involved (midwives and their role in referring). The materials developed were ready to be used after the completion of the referral pathway.

Feedback/discussion/action planning/review: In order to effectively implement this intervention it was important to take the staff's current level of smoking cessation knowledge into account. I contacted the lead midwife for midwives' professional development and emphasised the importance of receiving smoking cessation training and also requested their availability to attend training sessions. This was again discussed in meetings and emails (please see Appendix XII for correspondence). It was agreed that midwives throughout the Borough would receive Level 1 Smoking Cessation training as part of their continuous professional development.

Consultancy interventions to support the implementation of action plan (training): I planned to deliver the training once a month over the next one year, as well as launch events prior to delivering the Level 1 training. I agreed with the consultant midwife

about when I should aim to launch the service in the hospital and inform staff regarding the attendance. However, not many staff could attend the launch due to the extremely busy nature of the booking centre. I therefore suggested postponing the launch, and having an additional launch so the booking centre staff would be able to attend (please see correspondence in Appendix XIII).

All legal, ethical, safety and organisational requirements were taken into account (where needed) throughout planning and delivering training, by consulting the client.

Consultancy interventions to support the implementation of the action plan:

Delivering Level 2 training was not possible due to staff's busy schedule and lack of time allocated for training purposes. I therefore decided to deliver Level 1 Training, which would enable them to become competent in the following areas:

- Raising the issue of smoking in pregnancy.
- Referring the patients to the specialist service.
- Knowledge of smoking in pregnancy and smoking cessation.

Smoking cessation training could be provided to the staff on a one-hour slot on their midwifery continuing professional development days (requires compulsory attendance). This monthly training would provide an opportunity for all midwives and student midwives working in the borough (including midwives from outside organisations in this London Borough, e.g. Early Start, etc.) to receive smoking cessation training and enhance their skills in referring clients to the specialist service. Effective implementation of the training was a key aspect, as the outcome of the training would

be reflected in the number of referrals received and number of clients accessing the specialist service.

Consultancy interventions to support the implementation of the action plan (promoting the service through local media): Promoting the service through the local media was just as important as raising awareness through launch events and training. I had written an advertisement for the in-house bulletin (please see appendix XIV) which was distributed via the intranet, the Woodside Hospital Radio magazine (please see Appendix XV), and also the hospital radio itself, which aired a jingle to promote the service. This helped me promote the service in the hospital and the local community in this London Borough.

Evaluation/completion (after being referred): The referral pathway demonstrates that patients get referred at booking. Once they have been referred, midwives would drop the referral card in a collection box which was collected by a member of the Stop Smoking Service twice weekly. Once the patient had been identified, an appointment would be made with the Pregnancy Stop Smoking specialist.

The outcomes of the consultancy in relation to its objectives showed the following at a five-month post-implementation period:

- The importance of quitting smoking during pregnancy had been raised, through delivering training, and launch events, and media. The staff were well-informed of smoking and its impacts on pregnancy as well as the importance of quitting in pregnancy.

- Healthcare professionals (all midwifery staff) attended the Level 1 training, which also covered referring patients to the specialist service. The number of referrals received will also show the staff's level of engagement in this area of work.

- The referral pathway was easy, simple and clear to understand and staff members were now aware of how to refer patients to the specialist service.

3.5 Monitor the implementation of consultancy

Information extracted from the referral card was closely monitored and recorded on an Excel spreadsheet for later evaluation. It was possible to extract any missing data from the Electronic Patient Record. Evaluating the data showed the following:

- An average of 40 referrals received by month, compared to data from the previous year (9.6 referrals) (please see Appendix XVI for number of referrals before and after the intervention).
- An average of 62 women accessing the service and setting a quit date (please see Appendix XVII for number of women who had accessed the service).
- This borough has a very diverse community where many different languages are spoken and consists of a large number of Black and Minority Ethnic (BME) groups. Smoking in BME groups has been underreported, and recording ethnic origin would provide an opportunity to evaluate whether or not the service was accessible to a diverse population.

Midwives who undertook the ‘brief intervention Level 1’ training reported feeling very confident and competent in referring patients to the Pregnancy Stop Smoking Service, which increased the number of referrals coming through to the service. After the consultancy was reviewed, two areas were identified which needed to be addressed in order to improve the service, as described below.

The size of the referral card meant there were limitations on the amount of information that could be recorded, making it difficult to keep an overview of attempts to contact clients or appointment dates. I suggested changes to the referral card, and after collation of evidence to support this complication the difficulties were agreed to be real. As service demand was increasing I proposed the production of booklets as opposed to cards as a solution (see Appendix XVIII for new improved referral booklets). As the majority of patients were referred at the booking clinic and hence were diverted to the service at initial stages, other maternity departments would have fewer smokers who needed referral to the specialist service. However, there was lack of awareness in the other wards and some had reported not being aware of how to refer clients. It was challenging to break the barriers in the wards over and over again, and therefore a ward poster had been suggested as an effective reminder on how to refer patients. This had been developed to be displayed in each of the different wards (please see Appendix IX for the ward poster). Both amendments had been agreed by the client and no major changes were required. It was agreed to review the service again in approximately six months.

To ensure best practice and maintain security and confidentiality, data was stored on a file that was held in a secure location only accessible to those directly involved in this work. The quality assurance procedures I adopted involved the collection and evaluation of data over time and the success rate over this period. The process involved the number of referrals to the service in the previous year, along with the success rate of smokers who quit through the service, and the amount of service users who had attempted to change their behaviour, e.g. setting a successful quit date. The data collection, storage

and usage procedures were designed to comply with codes of ethical conduct and data protection regulations.

3.6 Evaluate the impact of consultancy

Evaluation of the consultancy demonstrated the following:

- 522 pregnant smokers referred to the Pregnancy Stop Smoking specialist during the 15 months after the implementation.
- For 2006-07 there were 41 women setting a quit date to change smoking behaviour, and 19 sustained the cessation at 4 weeks. Quit rate was 46%.
- For 2007-08 there were 64 women setting a quit date, and 37 had still quit at four weeks. The quit rate was 58%.
- For 2008-09 there was an 80% (79.7%) increase in women setting a quit date: 115 women set a quit date and 68 had still quit at 4 weeks. The quit rate was 59%.
- For 2009-10 quarter 1 there were 26 women who set a quit date and 22 had still quit at 4 weeks – making a total of 85% quit rate for quarter one in 09/10.

A social marketing company had been assigned to carry out some focus groups to explore people's experiences of using the service. I recruited pregnant smokers to participate in the focus groups. These participants had already accessed the service, therefore their views and experience could be taken into account.

The purpose of the evaluation was to identify any gaps within the intervention to see whether the objectives and aims of the consultancy had been met, and how

improvements could be made. Furthermore, the evaluation highlighted which areas needed improvement. Evaluation was carried out in line with objective and aims of the consultancy.

As part of good service development I felt it was important to provide feedback to staff regarding their referrals to the service, so regular feedback sessions were arranged to discuss and highlight the following areas with the staff. The sessions covered the following areas:

- The encouraging number of referrals so far.
- The number of clients who had managed to quit smoking.
- Midwives' positive and encouraging role in service improvement and identification of areas which needed improvement.
- How can the service be improved?

During the feedback session provided to the midwives, new areas were identified:

- Partners/husbands had shown keen interest in quitting smoking to promote a smoke-free environment for the baby and also to be supportive for their partner's attempt to stop smoking.
- There were a high number of patients that the service was unable to contact.

Assessing the outcome of the evaluation showed that there was a need to provide intensive one-to-one support and tailored advice training, so healthcare professionals were raising their competence with regard to raising the importance of quitting smoking, and independently supporting pregnant clients in their attempts to change smoking behaviour.

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Appendices

Appendix I

[redacted] NHS
Primary Care Trust

Request for Health Psychology consultancy services	Page 1 of 2

Name of Client NHS [redacted] Public Health Directorate	Client reference: [redacted]
Address [redacted] [redacted] London [redacted]	Telephone number 0207 [redacted] Fax number Email address [redacted] nhs.uk

Request:

- To address the health inequality gap in [redacted] in relation to smoking in pregnancy (pre and post natal care regarding smoking cessation)
- Develop a plan with a key focus on strategies for reducing smoking in pregnancy in [redacted]
- Develop a service (using participatory methods) to support pregnant women and their partners in smoking cessation.
- Draw on theoretical knowledge and evidence based therapies for behaviour change

Name of Consultant Sonia Zafar	Service offered Health Psychology Services
Address NA	Telephone number: NA Fax number: NA Email address: NA

[redacted] NHS
Primary Care Trust

Request for Health Psychology consultancy services	Page 2 of 2

This contract is made between the Consultant and the Client for consultancy services and the Client has agreed to accept the following terms:

4. **The services**
The consultant shall provide to the client the Services referred to above and/or in attachments to this contract or other related correspondence.

5. **Fees**
The client shall pay for the services set out above. If the client disputes an invoice, or part of the invoice, he must immediately notify the consultant in writing.

6. **Intellectual property and Ownership:**
All patents, copyright and other intellectual property rights originating or deriving from the consultancy service shall be deemed to be the undisputed property of the consultant. All working papers, software and other documentation or material of what so ever nature developed, made or acquired by the consultant in the course of this contract shall be the property of the consultant and shall be delivered to the consultant on demand or in the event of termination of this contract.

7. **Confidential information**
The Consultant will keep confidential and not use or disclose any third party outside. Furthermore, the consultant will abide by ethics and code of conduct set out by British Psychological Society.

8. **Termination:**
If the client shall fail to make any payment or fail to carry out its responsibilities as defined hereunder, then the consultant may, without prejudice to its rights and remedies, terminate the whole or any part of the contract forthwith. If the consultant shall fail to provide its services as defined herein , then the client shall have the right to terminate this contract forthwith.

6. **Clients facilities:**
The client shall make available to the consultant all office space and other Clients facilities reasonably required and all records, documents and other data of the client reasonably required and all records, documents and other data of the client reasonably requested by the Consultant during the period of this contract.

1. **Place of work and Health and safety:**
The client has a duty to provide a safe place of work for the Consultant.

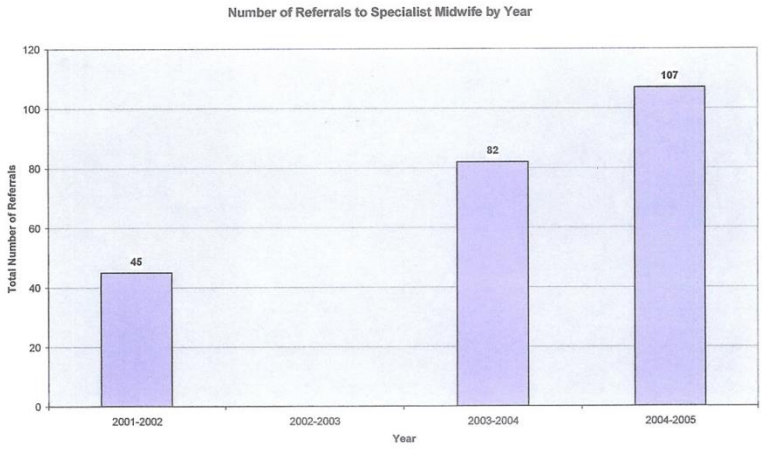
2. **Supersession of Contract:**
This contract constitutes the entire agreement between the parties. Variations to this contract may be made only when presented in writing and will only be considered valid when signed by both parties subsequent to the date of the signature of this contract

3. **Entire Contract:**
The parties agree that this contract constitutes the entire agreement between them and supersedes all previous drafts, agreements, arrangements and understandings between them, whether oral or written.

Appendix II

3. Results/Performance:

3.1 Referrals to the specialist midwife by year:



- The above data has been provided by the specialist midwife via yearly annual reports. Data is missing for 2002-2003
- Comparison between 2001-2002 and 2003-2005 is difficult as the data covers different time periods. 2001-2002 = Dec 2001 – Dec 2002, whereas both 2003-2004 and 2004-2005 cover the period April – March
- Whatever the time period, there has been an increase in the number of referrals since the service was set up in 2001.
- In 2004-2005 the referral system was changed. All pregnant women identified as smokers should now be automatically referred to the service. Previously women had been able to opt out.

Issues:

- Referrals numbers remain low particularly when compared to a similar service in Dudley where in 2002-2003 the specialist midwife had 319 referrals. Whilst Dudley is not similar in terms of its demography, particularly in relation to ethnicity, there are areas of marked deprivation within the borough. In addition the service itself is structured in the same way as the [redacted] service, with a specialist midwife providing intensive 1:1 support to pregnant women and their partners in their own homes. It would, therefore, be reasonable to expect referrals to be at least above 150 each year.
- Despite the change in referral system, the overall numbers remain low

Question:

Why are so few women referred to the service?

Appendix III

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted]ac.uk]
Sent: 20 November 2007 13:27
To: [redacted]
Cc: Zafar Sonia - Hospital Stop Smoking Advisor[redacted]
Subject: Re: Advice for[redacted]Service

One way of getting updated and have an opportunity to discuss this would be to come to our next Update, provided Sonia trained with us. I shall ask Jan to send her the Update info. Otherwise she may benefit from coming for a chat with[redacted]can you help?[redacted]

----- Original Message -----
From: [redacted]
To: [redacted]ac.uk
Cc: sonia.zafar@[redacted]nhs.uk
Sent: Tuesday, November 20, 2007 11:53 AM
Subject: Advice for[redacted]Service

Hi,
I had a call today from Sonia Zafar, a L3 advisor at[redacted]Hospital who would like some info about how we run the service here. She deals with pregnancy & inpatients there, so maybe you could help?
She would like to know what the referral pathway is, how effective it is & any ideas about how she can improve her service.

sonia.zafar@[redacted]nhs.uk
0207[redacted]

I would appreciate it if someone could give her any information or help
thanks

[redacted]
London[redacted]

Tel: 020 7[redacted]
[redacted]clinic@[redacted]ac.uk

Appendix IV

[redacted] NHS
Primary Care Trust

Fees:

Consultancy fee: £45 pr hour/ for 15 hours pr week for a total of 104 weeks = £70,200 total
Travel costs and subsistence: As and when needed.
General Costs (administration/overheads etc): As and when needed.
Promotion and publications: Dependant on the budget
Meetings, conferences and seminars: As and when needed
Equipment: As and when needed.

Appendix V

Midwifery Supervised Training
Professional Learning Days for 2007-2008
New[redacted]ospital Trust
Stop Smoking Training
Trainer: Sonia Zafar (Health Psychologist (in training)/Specialist Stop Smoking Advisor

Date & Time	Venue	Session	Number of trainees
Monday 3rd December 2007 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	25
Monday 21st January 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	22
Monday 18th February 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	23
Monday 17th March 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	17
Monday 21st April 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	19
Monday 19th May 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	22
Monday 16th June 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	20
Monday 14th July 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	23
Monday 18th August 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	20
Monday 22nd September 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	23
Monda y 20th October 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	18
Monday 17th November 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	17
Monday 8th December 2008 at 09:30	[redacted]	Smoking Cessation Training for Midwifery Staff	16

Appendix VI

Zafar Sonia - Pregnancy Hospital Stop Smoking Specialist Advisor

From: [redacted] - Stop Smoking Programme Manager
Sent: 01 February 2008 10:48
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: FW: Pregnancy materials

Attachments: Costs.pdf; Referral.pdf

Costs.pdf (24 KB) Referral.pdf (57 KB)

[redacted]

Stop Smoking Programme Manager
[redacted] NHS Primary Care Trust
Directorate of Public Health
[redacted]

-----Original Message-----
From: [redacted] [mailto:[redacted]
Sent: 21 January 2008 13:11
To: [redacted] - Senior Public Health Manager
Cc: [redacted] - Stop Smoking Programme Manager
Subject: Pregnancy materials

Hi there

Attached you'll find details of estimated costs for all 4 'Pregnancy' items.
All based on previous costs - the only unknown would be an image cost for a single image that might run across the items as appropriate.

The Referral card has been laid out & a PDF is attached for you.
We'll go ahead & prepare the artwork files for the other 3 items but will await receipt of content before taking further.

All the best

[redacted]

- - - - - - - - - - - - - - - - - - - -

[redacted]

London [redacted]
T: 020 [redacted]

€ [redacted]
€
€
€ Print Management
- - - - - - - - - - - - - - - - - - - -

1

Zafar Sonia - Pregnancy Hospital Stop Smoking Specialist Advisor

From: [redacted]co.uk]
Sent: 06 February 2008 10:05
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: Referral card

Attachments: Refferal_card.pdf

Refferal_card.pdf
(660 KB)

Hi Sonia

Card is attached for you.

Unfortunately the image does not work behind the Pathway document as it is a landscape image. Also, having experimented, I think that any image that is placed behind the Pathway content (even if it is a tint) will result in a poor contrast when you print it out internally so I would advise against using an image at all.

However, if you would like us to re-design the Pathway document to tie-in with the referral card just let me know. We would use the same styling, font & colours as the reverse of the card. Cost to design this & supply as a PDF would be £100.

I will supply the poster with a new image shortly.

Regards

[redacted]

- -

[redacted]

London [redacted]

[redacted]

€ [redacted]
€
€
€ Print Management

- -

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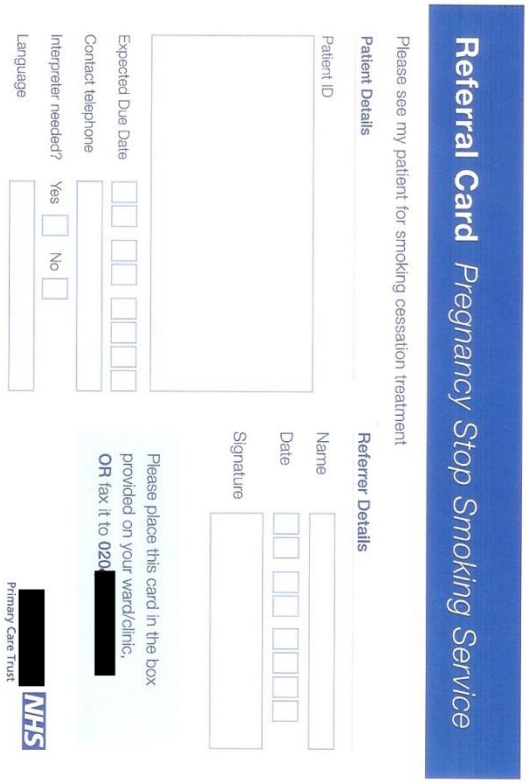
Appendix VII



Referral Card *Pregnancy Stop Smoking Service*

Please see my patient for smoking cessation treatment

Patient Details

Patient ID

Expected Due Date

Contact telephone

Interpreter needed? Yes ☐ No ☐

Language

Referrer Details

Name

Date

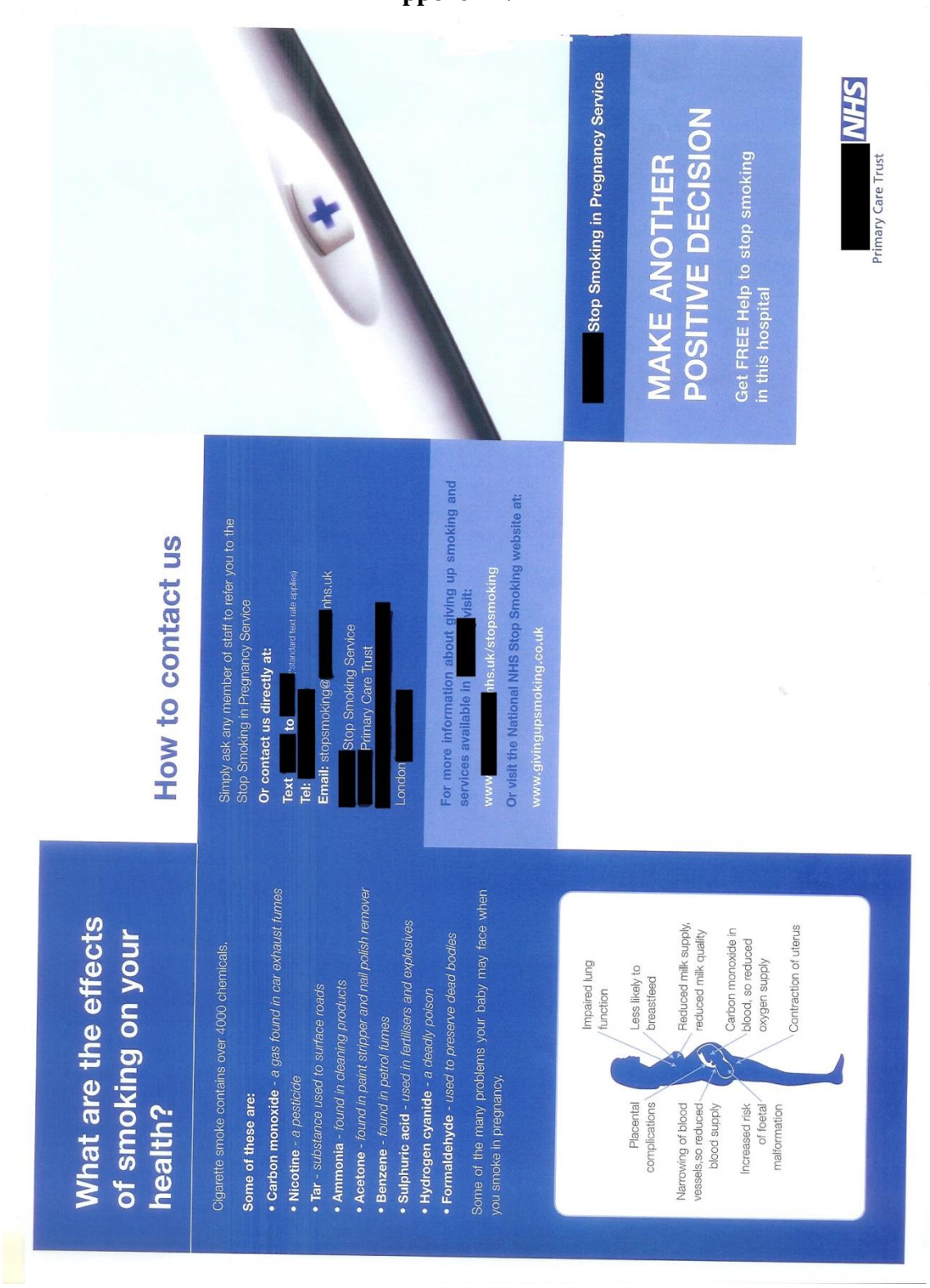
Signature

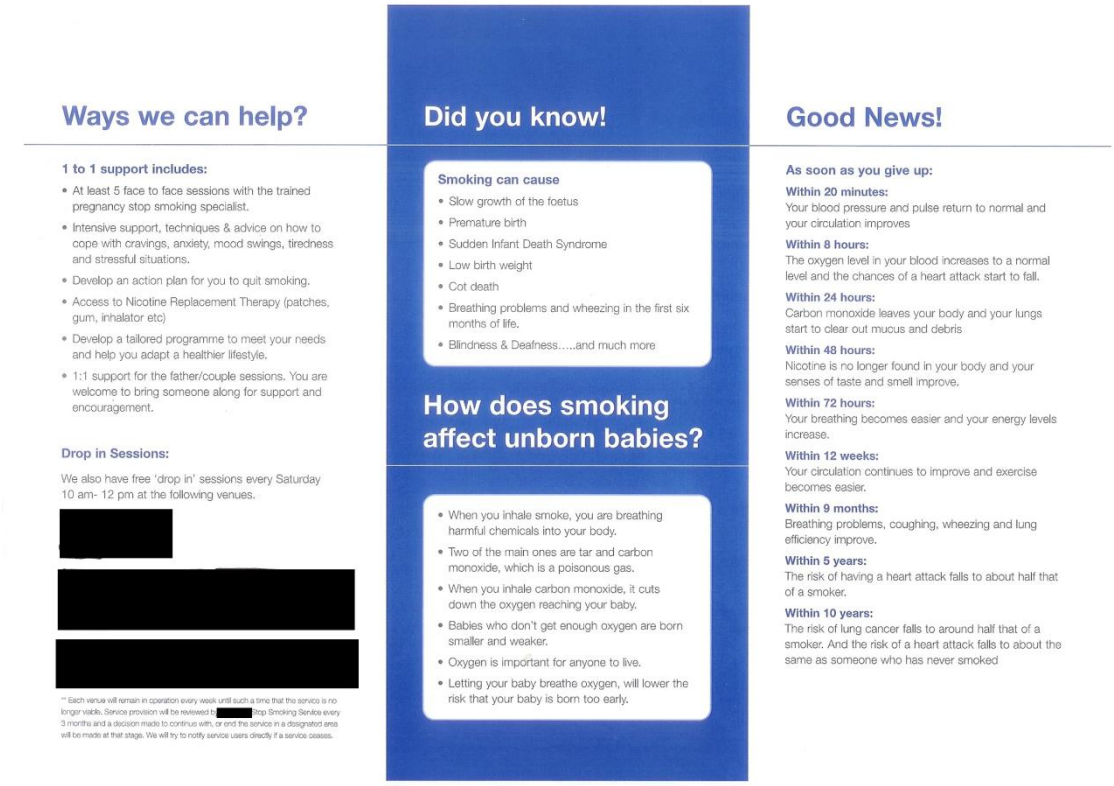
Please place this card in the box provided on your ward/clinic, **OR** fax it to 020[redacted]

[redacted] Primary Care Trust

NHS

Appendix VIII





Ways we can help?

1 to 1 support includes:

- At least 5 face to face sessions with the trained pregnancy stop smoking specialist.
- Intensive support, techniques & advice on how to cope with cravings, anxiety, mood swings, tiredness and stressful situations.
- Develop an action plan for you to quit smoking.
- Access to Nicotine Replacement Therapy (patches, gum, inhalator etc)
- Develop a tailored programme to meet your needs and help you adapt a healthier lifestyle.
- 1:1 support for the father/couple sessions. You are welcome to bring someone along for support and encouragement.

Drop in Sessions:

We also have free 'drop in' sessions every Saturday 10 am- 12 pm at the following venues.

[redacted]

** Each venue will remain in operation every week until such a time that the service is no longer viable. Service provision will be reviewed by [redacted] Stop Smoking Service every 3 months and a decision made to continue with, or end the service in a designated area will be made at that stage. We will try to notify service users directly if a service ceases.

Did you know!

Smoking can cause

- Slow growth of the foetus
- Premature birth
- Sudden Infant Death Syndrome
- Low birth weight
- Cot death
- Breathing problems and wheezing in the first six months of life.
- Blindness & Deafness.....and much more

How does smoking affect unborn babies?

- When you inhale smoke, you are breathing harmful chemicals into your body.
- Two of the main ones are tar and carbon monoxide, which is a poisonous gas.
- When you inhale carbon monoxide, it cuts down the oxygen reaching your baby.
- Babies who don't get enough oxygen are born smaller and weaker.
- Oxygen is important for anyone to live.
- Letting your baby breathe oxygen, will lower the risk that your baby is born too early.

Good News!

As soon as you give up:

Within 20 minutes:
Your blood pressure and pulse return to normal and your circulation improves

Within 8 hours:
The oxygen level in your blood increases to a normal level and the chances of a heart attack start to fall.

Within 24 hours:
Carbon monoxide leaves your body and your lungs start to clear out mucus and debris

Within 48 hours:
Nicotine is no longer found in your body and your senses of taste and smell improve.

Within 72 hours:
Your breathing becomes easier and your energy levels increase.

Within 12 weeks:
Your circulation continues to improve and exercise becomes easier.

Within 9 months:
Breathing problems, coughing, wheezing and lung efficiency improve.

Within 5 years:
The risk of having a heart attack falls to about half that of a smoker.

Within 10 years:
The risk of lung cancer falls to around half that of a smoker. And the risk of a heart attack falls to about the same as someone who has never smoked

Appendix IX

Make another positive decision

Phone the [redacted] Smoking in Preganancy service

0800 [redacted]

Call us now to find out about the free NHS service available.

[redacted] NHS
Primary Care Trust

Appendix X

Make another positive decision

Stop Smoking in Pregnancy Service

Quitting smoking during pregnancy is a positive decision you can make for yourself and your baby.

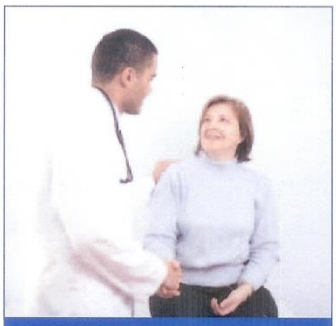
[redacted]Stop Smoking in Pregnancy Service provides high quality smoking cessation support during your attempt to quit smoking.

You will get full support and advice as well as learn skills to cope without smoking.

Quit now! Text [redacted] to [redacted] and the service will get in touch with you to support you through quitting. Alternatively, ask your nurse to refer you to the Pregnancy Stop Smoking Specialist.

For further information...

Phone Sonia Zafar on **07812[redacted]** or email your contact details to **stopsmoking@[redacted]nhs.uk**



Take advantage of our hospitality

The Hospital Stop Smoking Service

Quitting smoking whilst in hospital is the ideal way to minimise your stay in the hospital and improve your health.

There is a specialised hospital Stop Smoking Service for all inpatients, outpatients, staff and family members.

The specialist advisor will come to your bedside when you are in the hospital and work with you on a 1:1 basis providing excellent support and intervention.

Text [redacted] to [redacted] for an advisor*.

Once you leave the hospital...

...you can still get help to quit smoking in your area. **For further information phone 0800[redacted]**

** Standard text rate applies*

[redacted] NHS Primary Care Trust

Appendix XI
Example of correspondence I

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted].nhs.uk]
Sent: 07 February 2008 16:22
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: RE:

Hi Sonia

They look great!!

Just a thought, but I was wondering if it might be possible for the referral form to be available on the trust intranet so that midwives can do it electronically and send it straight to you? We have just recently put the child protection referral and health visitor referral forms on the intranet and it seems to be working brilliantly

See you tomorrow at the booking clinic

I have the lap-top/projector arranged

[redacted]
Consultant Midwife
[redacted] NHS Trust
020[redacted]
07768[redacted]

-----Original Message-----
From: Zafar Sonia - Hospital Stop Smoking Advisor [mailto:sonia.zafar@[redacted].nhs.uk]
Sent: 07 February 2008 12:59
To: [redacted]
Subject:

Hi [redacted]
Hope you are well.
The poster for the maternity wards is ready, and so is the referral card. Let me know what you think of it.

Thanks

Sonia Zafar
Hospital Stop Smoking Specialist Advisor

[redacted] Primary Care Trust
Directorate of Public Health
[redacted]
London [redacted]

Telephone: +44 (0[redacted]
Mobile: +44 (0)
Fax: +44 (0)

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This message has been inspected by DynaComm i:mail

Example of correspondence II

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted] [redacted]@[redacted].nhs.uk]
Sent: 08 April 2008 16:03
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Subject: RE: Referral cards and posters are ready

The midwives who work regularly in the booking team are those that you listed below as making the referrals to your service. Occaisonaly a midwife is re-deployed from another area of the maternity department to work in the booking centre, but you will be capturing the entire midwifery workforce via the monthly midwifery study day. You would be very welcome to visit the booking team at any time, please feel free to just go along and keep reminding the team who you are and getting them used to your face.

As for boxes, we don't have anything specific available in the department. I guess the box needs to be closed in design as the cards have personal information on them. Or perhaps a document wallet? Usually when we need such things we have to purchase them especially. Do you not have any budget from your service to supply sundries?

[redacted]
Consultant Midwife
[redacted] Hospital NHS Trust
020[redacted]
077[redacted]

-----Original Message-----
From: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
[mailto:sonia.zafar@[redacted].nhs.uk]
Sent: 08 April 2008 15:56
To: [redacted]
Subject: RE: Referral cards and posters are ready

Hi Therese,
You're welcome. Yes I think we should keep an eye for it. I am still working on the other stuff (ethnicity, age etc) and when I have done that I will be happy to send you the details. I am still looking to work with some health advisors, but we have some health advocates who are eastern European, but have been on leave, so luckily the health advocacy service at the hospital has been very helpful. Would you be able to provide me with all the names of the ladies working in the booking clinic? I would like to make sure that all of them know how to refer, so we can get every smoker possible.

Would you be able to tell me where I can find a box for the referral cards so I can leave them in the booking clinic.

Thanks

Sonia

From: [redacted] [mailto:[redacted]@[redacted].nhs.uk]
Sent: 08 April 2008 15:24
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Subject: RE: Referral cards and posters are ready

Hi Sonia

Thank you very much for the data below. I will certainly pass on the good news to the midwives from the booking clinic. Logically, if the majority of pregnant smokers are being referred to you at booking, the number of referrals from other sectors of maternity will be lower in number, but I think it is good that we keep a watchful eye of this.

Do you have a breakdown of the ethnicity/age etc of the women whom have been referred to your

service? I think it would be useful to have the rich picture.

Are you now working with the Eastern European health advisors on smoke cessation?

[redacted]
Consultant Midwife
[redacted] NHS Trust
020 [redacted]
077[redacted]

-----Original Message-----
From: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
[mailto:sonia.zafar@[redacted].nhs.uk]
Sent: 08 April 2008 11:53
To: [redacted]
Subject: RE: Referral cards and posters are ready

Hi [redacted]
I have now entered most of the details in the system from which I have extracted the following information.

Total Nr of referrals from Pregnancy service from 05.12.2007-17.03.2008 = **36.**

Names of midwives which have referred:

[redacted] has done an amazing job referring most of the smokers (Total nr- 16)
[redacted] Total nr - 6)
[redacted] total nr - 6)
[redacted] (total nr - 3)
[redacted] otal nr – 2)
[redacted] (total nr – 2)
[redacted] (total nr -1)

All of the referrals have come from the maternity booking centre except the one from [redacted] which came from ANC.

Total nr of referrals each month:
Dec: 6
Jan: 13
Feb: 14
March: 3

I think the ladies mentioned above have done a very good job in referring the patients. I would specifically like to thank them for helping these women by referring them on to me. Looking at the number of women who have now been trained in the public health training, I hope they will refer them on as now they have been trained to refer.
I would like to encourage all of them to refer.

Thanks

Kind Regards

Sonia Zafar
Hospital & Pregnancy Stop Smoking Specialist Advisor

[redacted] Primary Care Trust
Directorate of Public Health
[redacted]
London [redacted]

Telephone: +44 (0) [redacted]

Mobile: +44 (0)[redacted]
Fax: +44 (0)[redacted]

From: [redacted] [mailto:[redacted]@[redacted]nhs.uk]
Sent: 25 March 2008 13:36
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Subject: RE: Referral cards and posters are ready

If you have time it would be helpful if you could give me a short report of how many referrals received per week/month, area that is making the referral (If you don't know which area tell me the names of the midwives & I can work out which area.) Also it would be helpful to know the age range, nationality and language spoken of the clients. And how pregnant they are if you are collecting that information.

I would guess that most of your referrals are coming from the antenatal booking central clinic

[redacted]
Consultant Midwife
[redacted]NHS Trust
020[redacted]
07768[redacted]

-----Original Message-----
From: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor [mailto:sonia.zafar@[redacted].nhs.uk]
Sent: 25 March 2008 13:26
To: [redacted]
Subject: RE: Referral cards and posters are ready

Hi [redacted]
I have handed out the referral cards to the midwives to take to the wards.
The referrals are going well, however there are only certain names (of referrers) that continuously come through, which is great. But I wish all of them can refer. Hopefully, now that the pretty cards are out, the community midwives can have a chance to refer aswell.

Will keep you posted.

Regards

sonia

From: [redacted] [mailto:[redacted]@[redacted].nhs.uk]
Sent: 20 March 2008 08:49
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Subject: RE: Referral cards and posters are ready

Sounds great Sonia. Well done!

How are the referrals going? Do you have any stats yet for the first months?

[redacted]
Consultant Midwife
[redacted]NHS Trust
020 [redacted]
07768[redacted]

-----Original Message-----

From: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
[mailto:sonia.zafar@[redacted]nhs.uk]
Sent: 19 March 2008 10:45
To:[redacted]
Subject: RE: Referral cards and posters are ready

Hi [redacted]
I have sent out the posters and leaflets to[redacted]so they should be distributed on the wards that you mentioned very soon. I will bring along the referral cards to the training next week.

Thanks

Sonia

From: [redacted] [mailto:[redacted]@[redacted]nhs.uk]

Sent: 05 March 2008 18:36
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: RE: Referral cards and posters are ready

When are you doing the smoke cessation public health day? Could we plan the launch of information to staff to coincide? It might help to make an impact.

If you contact[redacted]she can help you publicise: there is the in-house weekly TIB, and the "Link", and also you could as[redacted]about local media coverage. Even photos' etc of you talking to staff, displaying a poster, etc etc

Clinical area's in hospital for maternity

Area's	**lead/contact name**
Central Booking clinic -	[redacted]
Antenatal clinic	
Central delivery suite	
Community Midwives	
Midwife Led Unit	
Maternity Day Care	
Oak/Larch ward	

Let me know if I can be of any further help

[redacted]
Consultant Midwife
[redacted]NHS Trust
020[redacted]
07768[redacted]

-----Original Message-----
From: Zafar Sonia - Hospital Stop Smoking Advisor
[mailto:sonia.zafar@[redacted]hs.uk]
Sent: 04 March 2008 15:50
To:[redacted]
Subject: Referral cards and posters are ready
Importance: High

Hi[redacted]
Hope you are well.
The Referral cards and posters are ready to be launched. They look

great. I have it all except the leaflets (which I will send out when I get them). They need to go up in all the wards and out to the midwives. Any suggestions on how and where would be ideal???

Regards

Sonia Zafar
Hospital Stop Smoking Specialist Advisor

[redacted]Trust
Directorate of Public Health
[redacted]
London[redacted]

Telephone: +44 (0[redacted]
Mobile: +44 (0)[redacted]
Fax: +44 (0)[redacted]

****

Our vision is that by 2020 health services in [redacted]will be as good as the rest of the country, and the health of the people of [redacted] will be as good as that of other Londoners .

[redacted]is a smoke free organisation. If you live or work in [redacted]want free advice about how to quit, call the Stop Smoking Team for help on [redacted]or email: stopsmoking@[redacted]hs.uk.

****

Example of correspondence III

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted]@[redacted]nhs.uk]
Sent: 23 May 2008 18:52
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Subject: RE: Lunch from Smoking Cessation Service on 27th May

Hi Sonia

Sorry I didn't manage to speak with you on Friday.

Enjoy the lunch on 27th, I have asked [redacted]om our Trust Communications dept to take some photo's and then we will word something for the Trust and department newsletter.

I am on leave now until 3rd June, when I get back I will speak with you about a platform to access other disciplines of staff and the possibility of using the weekly Risk Management meeting.

regards

[redacted]
Consultant Midwife
[redacted]Hospital NHS Trust
020[redacted]
0776[redacted]

-----Original Message-----
From: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
[mailto:sonia.zafar@newhampct.nhs.uk]
Sent: 23 May 2008 11:40
To: [redacted]
Cc: [redacted]
Moji[redacted]
Subject: RE: Lunch from Smoking Cessation Service on 27th May

Looking forward to see you all there.

Kind Regards

Sonia Zafar
Hospital & Pregnancy Stop Smoking Specialist Advisor

[redacted]Primary Care Trust
Directorate of Public Health
[redacted]

Telephone: +44 (0)[redacted]
Mobile: +44 (0)[redacted]
Fax: +44 (0)[redacted]

From: [redacted]
Sent: 23 May 2008 11:38
To: Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor
Cc: [redacted]
Univ[redacted]
(RN[redacted]

Appendix XII

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted] nhs.uk]
Sent: 24 January 2008 13:40
To: [redacted]
Cc: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: RE: community team meeting

I have spoken to Sonia and she has kindly agreed to come on Friday 8th February at 1300hrs to speak to the Booking Team.

Sonia has recently taken up this post, (it was vacant for over a year and maternity referrals had dropped off).

Sonia will give a brief working lunch presentation on the Smoke Cessation Service and referral pathways for pregnant women and their partners. She has revised forms etc.

Sonia is doing her best to identify some funding from reps or someone, so that some sandwiches/fruit/buns can be provided for the midwives that day.

[redacted]
Consultant Midwife
[redacted]
020[redacted]
077[redacted]

-----Original Message-----
From: [redacted]
Sent: 23 January 2008 16:34
To: [redacted]
Subject: RE: community team meeting

The only way the midwives could do that is if it run for 30min and it was based here in the MBC. Clinic start prompt at 08.45

[redacted]
Service Development Manager
Ext: [redacted]
E-M: [redacted]hs.uk

From: [redacted]
Sent: 23 January 2008 16:16
To: [redacted]
Cc: [redacted]
Subject: community team meeting
Importance: High

Hi [redacted]

The next community midwives team/CMU meeting is on Monday 4th February, at 0830hrs [redacted] organising the agenda.

I have four items for the agenda that are particularly relevant for the booking team as well

- Child Protection – flow chart, referral processes and EPR recording
- Referral processes for contraception for teenage mothers

- Smoke cessation programme
- K2

Would it be possible for the booking team to join the community midwives meeting that morning, I will have speakers from the smoke cessation service and SHiNE coming, so would be great if we could maximise the participation at one joint meeting?

[redacted] please could you put these three items on the agenda for me, Smoke Cessation and SHiNE will probably need about 20 minutes each. I will need about 5 minutes each for each of the other items

Many thanks

[redacted]
Consultant Midwife
[redacted] NHS Trust
02[redacted]
0776[redacted]

[redacted] NHS Trust is a smoke free organisation.
If you live or work in [redacted] and want free advice about how to quit, call the Stop Smoking Team for help on [redacted]
or email: stopsmoking@[redacted]hs.uk
****

Appendix XIII

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted].nhs.uk]
Sent: 09 January 2008 10:53
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: RE: Launch of referall pathway on 11 jan 2008

Hi Sonia

Yes I had intended to do a joint session this Friday with the Smoke Cessation and Teenage contraceptive referral pathways, but have needed to change my plans.

Thanks for being so accommodating!

[redacted]
Consultant Midwife
[redacted] Hospital NHS Trust
020 [redacted]
077[redacted]

-----Original Message-----
From: Zafar Sonia - Hospital Stop Smoking Advisor [mailto:sonia.zafar@[redacted].nhs.uk]
Sent: 09 January 2008 10:36
To: [redacted]
Subject: RE: Launch of referall pathway on 11 jan 2008

Hi [redacted]
Don't worry about it. 9 am sounds fine for me. I remember you told me it was for use of contraception in young mothers or something along those lines...we are talking about the same thing right?
Just get back to me when you have a confirmed date and time. I will be coming in on Friday to see some patients, and if I have some time left, I will pop by to say hello.

Thanks

Sonia

From: [redacted][mailto:[redacted].nhs.uk]
Sent: 09 January 2008 10:28
To: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: RE: Launch of referall pathway on 11 jan 2008

Good morning Sonia

I am sorry but I am going to have to defer Friday's meeting until next week. I am waiting for the Acting Matron for community midwifery to confirm the day she has her team meeting. I will get back to you as soon as she has told me the day. Their meetings generally take place early morning. Will 9am be OK for you?

The meeting will include the majority of the Community midwives (not hospital based ones). The Community midwives provide antenatal and postnatal care, including home visits. There will also be some of the Community Maternity Care Assistants.

[redacted]
Consultant Midwife
[redacted]Hospital NHS Trust
020 [redacted]

Zafar Sonia - Pregnancy & Hospital Stop Smoking Specialist Advisor

From: [redacted] [redacted]@[redacted].nhs.uk]
Sent: 01 February 2008 15:17
To: [redacted]
Cc: Zafar Sonia - Hospital Stop Smoking Advisor
Subject: smoke cessation - information
Importance: High

Hi [redacted]

As I mentioned to you [redacted] Sonia has recently taken up the post of smoke cessation advisor for [redacted]. She has very kindly agreed to come to meet the booking team, at 1300hrs next Friday 8th February. She will give a brief overview (approx 30minutes) of the service, update everyone on referral processes and answer any questions.

As you are aware smoke cessation in pregnancy is one of the key targets in our Infant Mortality Plan, as well as a PSA target, so this is an extremely important piece of work.

Sonia is aware that the booking team work under a lot of pressure throughout the day, and that it will be the teams lunch time, so she has been extremely thoughtful and generous and will be providing lunch on the day.

Please can you, or [redacted] ensure that the booking team are aware that Sonia will be there next Friday.

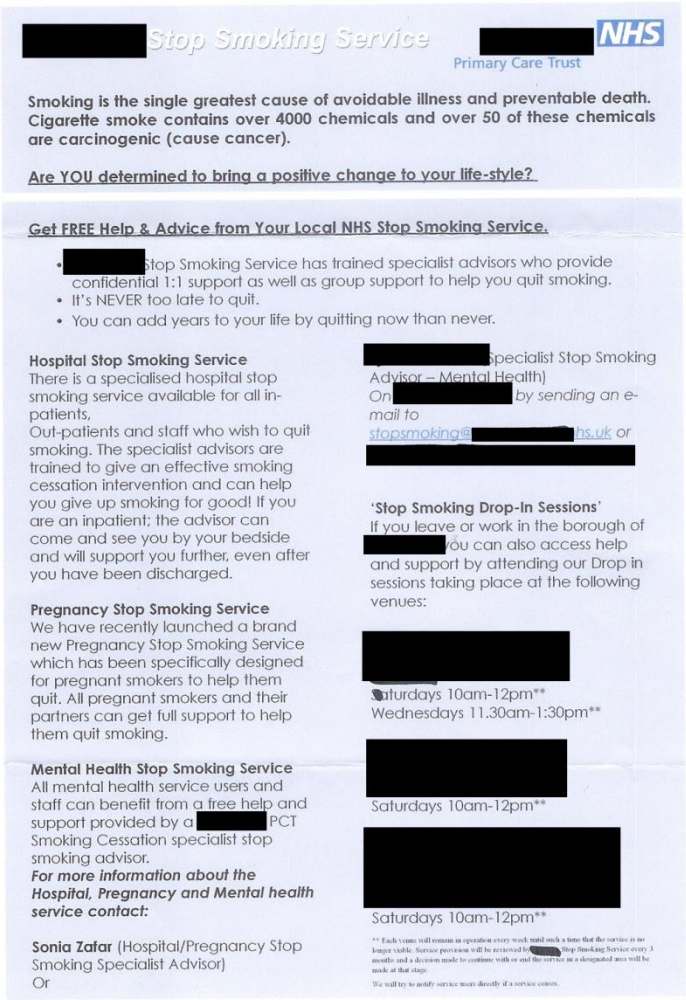
regards

[redacted]
Consultant Midwife
[redacted] NHS Trust
020 [redacted]
07768 [redacted]

--

[redacted] Hospital NHS Trust is a smoke free organisation.
If you live or work in [redacted] and want free advice about how to quit,
call the Stop Smoking Team for help on [redacted]
or email: stopsmoking@[redacted]hs.uk

Appendix XIV



[redacted] Stop Smoking Service

[redacted] NHS Primary Care Trust

Smoking is the single greatest cause of avoidable illness and preventable death. Cigarette smoke contains over 4000 chemicals and over 50 of these chemicals are carcinogenic (cause cancer).

Are YOU determined to bring a positive change to your life-style?

Get FREE Help & Advice from Your Local NHS Stop Smoking Service.

- [redacted] Stop Smoking Service has trained specialist advisors who provide confidential 1:1 support as well as group support to help you quit smoking.
- It's NEVER too late to quit.
- You can add years to your life by quitting now than never.

Hospital Stop Smoking Service
There is a specialised hospital stop smoking service available for all in-patients,
Out-patients and staff who wish to quit smoking. The specialist advisors are trained to give an effective smoking cessation intervention and can help you give up smoking for good! If you are an inpatient; the advisor can come and see you by your bedside and will support you further, even after you have been discharged.

Pregnancy Stop Smoking Service
We have recently launched a brand new Pregnancy Stop Smoking Service which has been specifically designed for pregnant smokers to help them quit. All pregnant smokers and their partners can get full support to help them quit smoking.

Mental Health Stop Smoking Service
All mental health service users and staff can benefit from a free help and support provided by a [redacted] PCT Smoking Cessation specialist stop smoking advisor.
For more information about the Hospital, Pregnancy and Mental health service contact:

Sonia Zafar (Hospital/Pregnancy Stop Smoking Specialist Advisor)
Or
[redacted] Specialist Stop Smoking Advisor – Mental Health)
On [redacted] *by sending an e-mail to* stopsmoking@[redacted]hs.uk or [redacted]

'Stop Smoking Drop-In Sessions'
If you leave or work in the borough of [redacted] you can also access help and support by attending our Drop in sessions taking place at the following venues:

[redacted]
Saturdays 10am-12pm**
Wednesdays 11.30am-1:30pm**

[redacted]
Saturdays 10am-12pm**

[redacted]
Saturdays 10am-12pm**

** Each venue will remain in operation every week until such a time that the service is no longer viable. Service provision will be reviewed by [redacted] Stop Smoking Service every 3 months and a decision made to continue with or end the service in a designated area will be made at that stage.
We will try to notify service users directly if a service comes.

Appendix XV

[redacted] 24 hour broadcast 2008

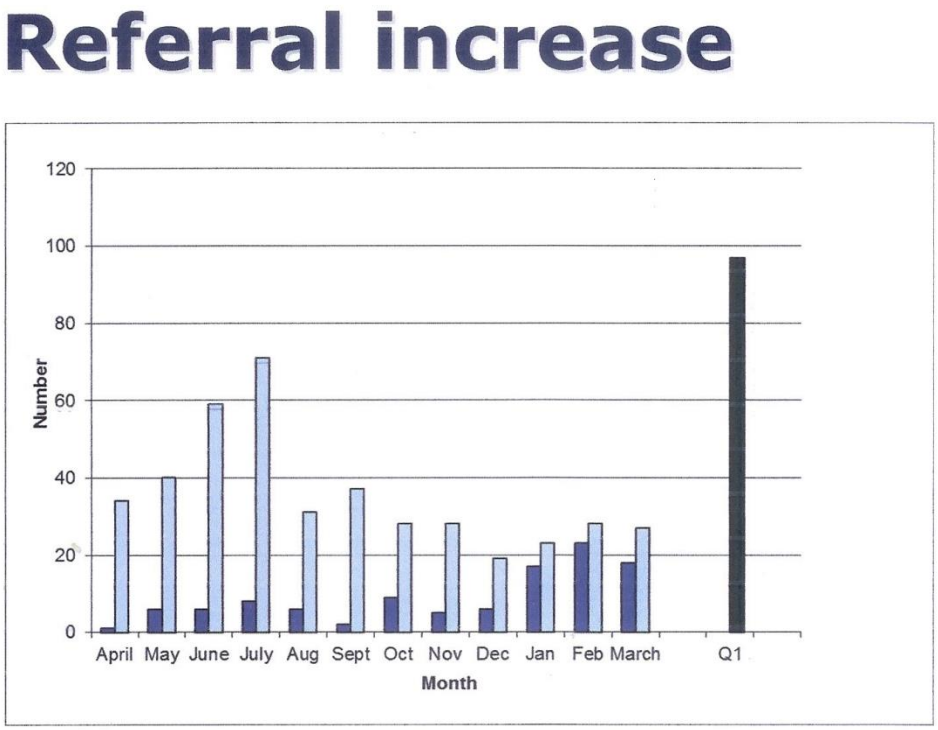
Since 2006 the Trust has got involved with the [redacted] Hospital Radio 24 hour broadcast by providing a range of staff across the day to speak directly to patients via live interview about their service and about improvements that are taking place across the hospital. In 2007 there were interviews with catering staff to highlight the improvements that have been made; the learning and development team shared information about the Community Enhancement Programme; a rheumatology nurse talked about the service; and Patients First talked about how patient feedback is used to improve services.

What I need from Leadership this year....

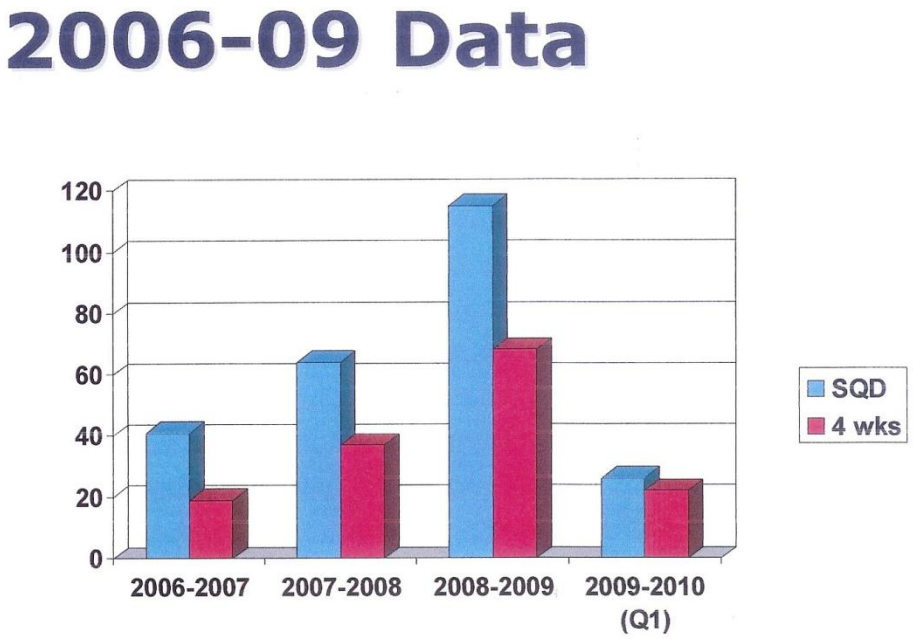
What key messages and information should be shared with patients
Any nominated staff to be interviewed
Would any members of MEG like to be interviewed – I know that in the past Woodside have been very keen to have CEO representation

Service	Interviewee	Time	Aim
Performance	[redacted]	07.00 – 07.30 09.45 – 10.00	Share details of Trust performance/ratings
Patients First	[redacted]	10.00 – 10.15	Promote Patients First – encourage feedback
Stop Smoking Service	Sonia Zafar	10.15 – 10.30	Hospital stop smoking service – how to access
Infection Control	[redacted]	10.30 – 10.45	Ratings – how patients and their visitors can help – what the Trust does to reduce infections
ICE	[redacted]	10.45 – 11.00	What is ICE – why are we doing it – improving services for Trust patients
[redacted] Quality Assurance System (NQAS)	[redacted]	11.00 – 11.15	Details about what this means for [redacted] patients

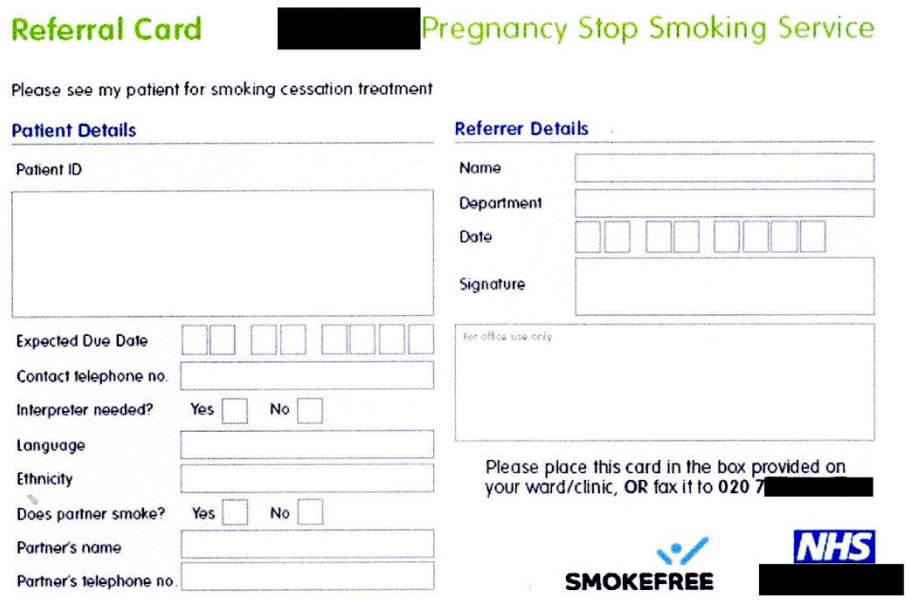
Appendix XVI



Appendix XVII



Appendix XVIII



Referral Card [redacted] Pregnancy Stop Smoking Service

Please see my patient for smoking cessation treatment

Patient Details

Patient ID

Expected Due Date

Contact telephone no.

Interpreter needed? Yes ☐ No ☐

Language

Ethnicity

Does partner smoke? Yes ☐ No ☐

Partner's name

Partner's telephone no.

Referrer Details

Name

Department

Date

Signature

For office use only

Please place this card in the box provided on your ward/clinic, **OR** fax it to **020 7** [redacted]

SMOKEFREE

NHS [redacted]

SECTION C

Professional practice

Teaching & Training Competence

Unit 4

Smoking Cessation Brief Intervention training - for Midwives and Maternity Care Assistants

Smoking Cessation Brief Intervention Training - for Midwives and Maternity Care Assistants (MCAs)

4.1 Plan and design training programmes that enable students to learn about psychological knowledge, skills and practices

[redacted] Stop Smoking in Pregnancy service started developing in December 2007. The aim of the service was to provide specialist treatment consisting of pharmacological therapy and intensive behavioural support to all pregnant clients and their partners through their attempt to change smoking behaviour. A referral pathway is used to interlink NHS services, which allows patients to access other services that they require. In order for the services to run effectively and reduce barriers for clients to access different services, we as healthcare professionals need to maintain a structure that reinforces this.

Prior to the service being set up, there was a lack of focus on smoking during pregnancy, and even less on the importance of reducing smoking or the reduction of harmful effects from smoking. Midwives/MCAs received no training beyond the standard curriculum during the process of qualifying. Funding was possibly the reason behind this shortcoming, as well as other possible factors. To raise the profile of smoking cessation during pregnancy I ensured staff had access to 'Level 1: Smoking Cessation Training - Brief Intervention and Very Brief Advice'. This was achieved by collaborating with the professional development midwife alongside the consultant midwife at a London teaching hospital, ensuring smoking cessation was part of the monthly midwifery training, hence encouraging midwives/MCAs to attend training and professional development.

4.2 Identify training programme structure and content

The experiences of midwives further cemented the need for smoking cessation training. After several discussions and forums with midwives working on the front line, at the hospital, I gained further insight into their experiences of delivering a maternity service to smokers. Many felt it was not part of their job description to advise on smoking cessation, but even when they did engage the mothers and pregnant women who smoked, they felt that their advice was perceived as merely a statement to 'stop smoking'.

The delivery of training, structure and content was influenced by the time allocated to the session, which was sixty minutes. Moreover, I needed to consider how I could deliver an effective session which would fulfil the objectives and aims of Brief Intervention smoking cessation training in the time allocated. It is usually advised to adopt learning strategies which are diverse in nature in order to address the different types of learners (Montgomery, 1995) – and furthermore to use different kinds of interactive tools (Kozma, 1991).

Trainees were encouraged to engage in the session, which allowed me to be in a better position to assess their learning needs (Walsh, 2006). The NICE guidelines for smoking cessation (NICE, 2008; BMA, 2004; Department of Health, 2007) training content provided the basic foundation for the development of the training. However, I needed to tailor it to the specific audience, i.e., midwives and maternity care assistants, and therefore took the initiative to design the training based on an informal assessment of their needs. This was gained through general correspondence and anecdotal evidence

and a detailed overview of their previous training. One issue which needed to be addressed was that a number of midwives reported feeling reluctant and hesitant to raise the issue of smoking cessation with their clients as many felt this could ruin their relationship. A large number clients (pregnant women) also reported that the issue of smoking was not addressed to them in an appropriate and/or empathetic manner. To ensure maximum cost benefit ratios the decision was taken to use the resources and literature already developed, instead of developing additional training material for smoking cessation and pregnancy, based on the principles and guidelines provided (NICE, 2008; RCM 2003; Department of Health, 2006). An outline of the training was sent to the manager for feedback prior to delivery. Changes were made in line with the feedback received.

4.3 Deliver such training programmes

Since January 2008, I had planned several training programmes and delivered training on a regular, monthly basis. This had improved my teaching and training skills over time, enhancing my competency in delivery. Delivering these sessions required a lot of planning ahead in relation to schedules etc. as well as session planning. Sessions were planned well ahead of time and midwives were provided with learning packs which could be kept for reference later (please see Appendix I for material used for training). Literature, and other material published by Smoke Free London was also provided in the training packs. After sessions, I had the opportunity to view the initial recording and reflect back on the training in an attempt to identify any necessary improvements. My improvements as a trainer have been recorded in the logbook, and show overall progression. Over time I had slightly changed my delivery style for various reasons. Firstly, I needed to engage the trainees with the learning instead of delivering training in

a ‘lecture’ style. This greatly improved their participation during the sessions. One of the interesting challenges was the need to adopt different teaching styles and tailor the training in order to provide a comprehensive and relatively easy approach to the topic. This challenge was overcome as I delivered the training consistently, thus enhancing my skills in training.

4.4 Plan and implement assessment procedures for such training programmes

Due to time constraints, it was not feasible or considered appropriate to have assessments carried out in the session. I aimed to adopt and implement interactive learning strategies as this training would later be implemented as a monthly training session. I therefore took a learner-centred approach where questions were raised frequently during the sessions and I encouraged trainees to take part in answering them. This enhanced their learning, as many wanted to take part and also share their current level of knowledge (please see taped session at eleven minutes). The evaluation throughout the session suggested that the number of referrals received from the midwives (before and after training) had exceeded the targets. The achievement of the objectives can be seen, as the main aim of the sessions was to equip midwives with the skills and knowledge to refer patients to the specialist service.

4.5 Evaluate such training programmes

In order to both evaluate and deliver the training, I developed a short evaluation questionnaire (Appendix II) which the trainees were requested to complete at the end of the session. The evaluations showed that the trainees were very satisfied with the content of the session as well as its duration. Many were also pleased with the learning

and discussing in a plenum (details of monthly sessions and evaluation forms for each training session are available upon request).

The outcome of the training was evaluated based on the number of referrals sent to the Pregnancy Stop Smoking Service. It can be concluded that the dramatic increase in referral rate was due to the implementation of the training and attendees' increased awareness as well as increased competence in referring pregnant smokers. Please see Figure 1 for referral increase from April 2007-March 2009.

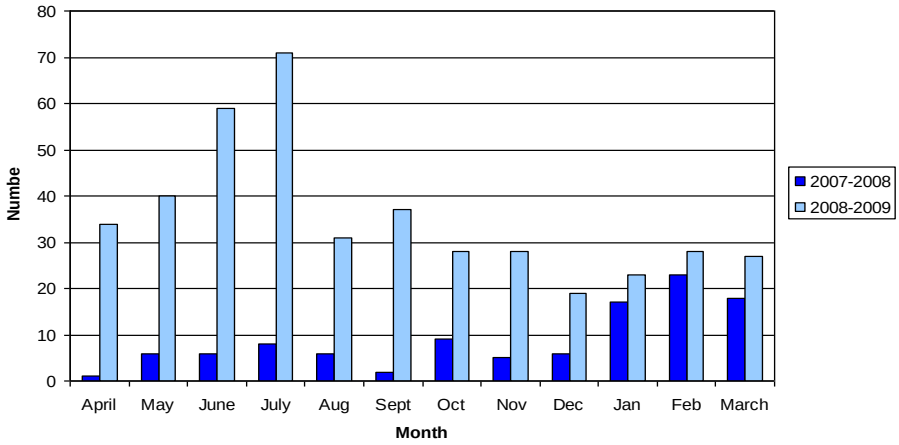


Figure 1: Number of referrals received from April 07-March 09

Reflective Commentary

Reflective commentary on thirty-six to forty-six minutes into the training. After having delivered numerous training sessions, I am attempting to explain the flexibility of the service and how the standard smoking cessation service runs and trying to confidently answer questions raised by the trainees. In the beginning of the session I can reflect that my speech was fast, and I was not as calm and in control of things as I am in this part of the training. I am trying to explain what happens in the 1:1 sessions with the clients in a

very casual way. I had to be careful not to use language which was not in their everyday use, to make it easier for them to understand. Explaining that I understand the challenge behind raising the smoking questions with pregnant mothers, confirms with them that I empathise with the trainees. As a result of raising the issue of smoking with pregnant clients, there is a potential for ruining the relationship between midwives and their clients. However, raising the importance of smoking cessation in pregnancy in an empathetic manner is important for effective healthcare for pregnant clients. I am trying to actively encourage midwives to talk about smoking cessation with their clients. I could see the midwives were nodding their heads, confirming their understanding while agreeing. It was also the use of simple language which made it easier for them to understand the importance of stopping smoking when pregnant. Following this, I am covering how behaviour is changed. I am trying to thoroughly explain to the trainees what is required before a behavioural change can occur while I bring other real examples for them to engage their understanding. I really enjoyed covering this part as I could provide some real-life examples, e.g. routine habits of different people, and how challenging it could be to break them. Throughout the session I have regular eye contact while acknowledging their responses, which I feel shows active participation from both sides.

Moving on to presenting the service posters etc, I confirm with the midwives whether they have seen them before and I get a few who acknowledge this, which shows that the midwives have seen the advertising of the service around the hospital. This helps me to identify any further gaps later on. Adding humour to the training helps to make sure the trainees are actually listening to what I am saying, and taking part actively. Following

that I realise how I looked too much at the screen while reading the information on it, which can be seen in the recording. It is useful to ask midwives after a couple of slides if they are following, and if there are any questions, etc. This always helps me to ensure that the trainees are learning and actively participating through the session. Outlining the need for the different ways to refer, I feel I have clearly mentioned why there are alternative ways to refer/self-refer if needed. I have become much more competent in answering questions confidently, as can be seen in the recording at 00:44, with direct eye contact, and acknowledging understanding of the question.

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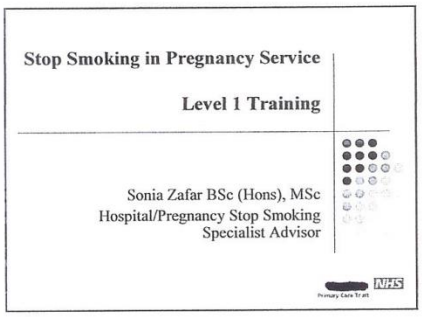
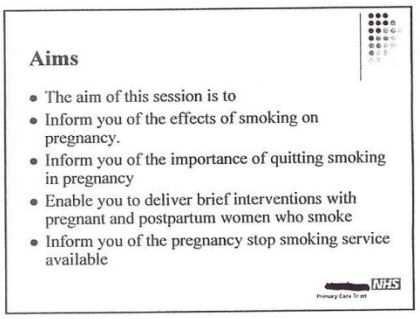
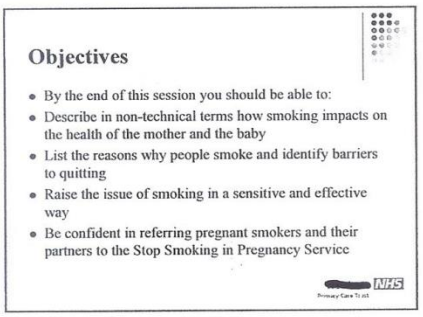
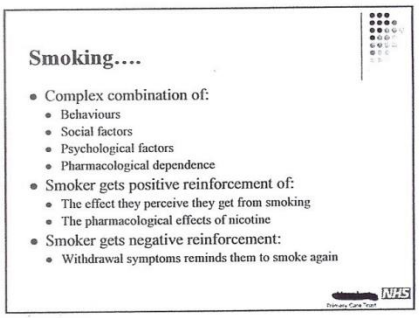
Appendices

Appendix I









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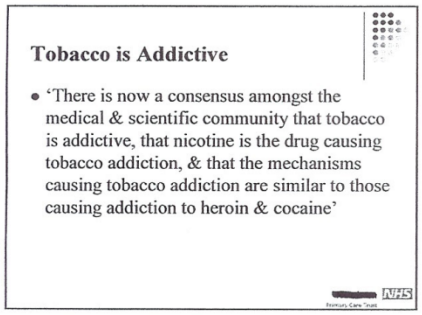
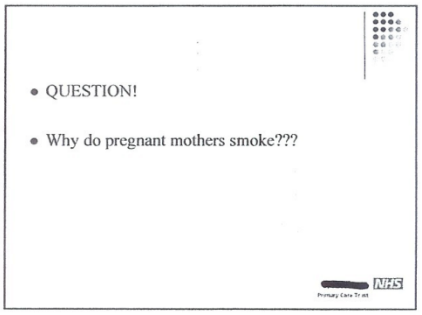
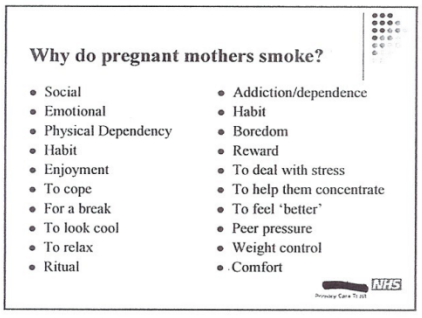
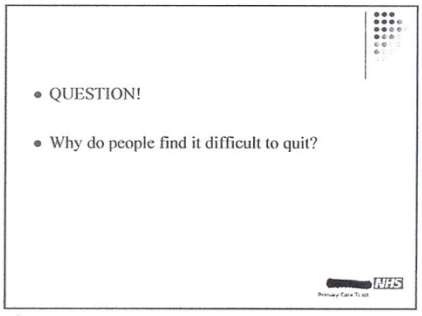
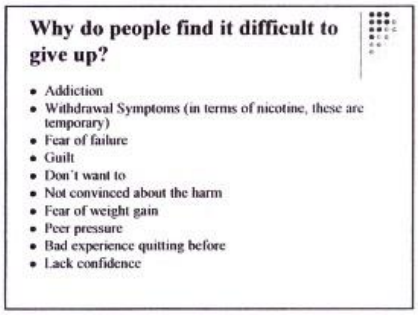

Tobacco is Addictive
• 'There is now a consensus amongst the medical & scientific community that tobacco is addictive, that nicotine is the drug causing tobacco addiction, & that the mechanisms causing tobacco addiction are similar to those causing addiction to heroin & cocaine'
NHS

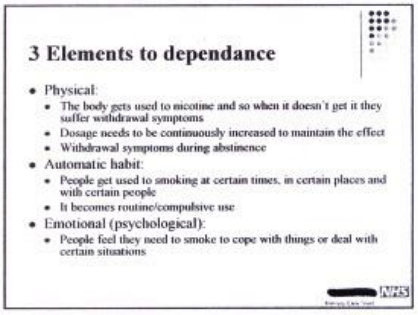

• QUESTION!
• Why do pregnant mothers smoke???
NHS

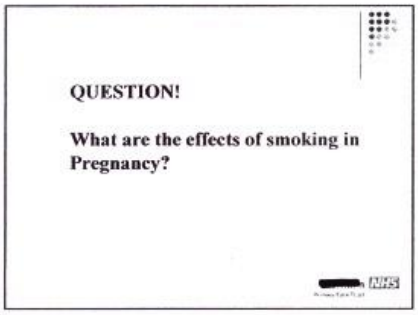

Why do pregnant mothers smoke?
• Social
• Emotional
• Physical Dependency
• Habit
• Enjoyment
• To cope
• For a break
• To look cool
• To relax
• Ritual
• Addiction/dependence
• Habit
• Boredom
• Reward
• To deal with stress
• To help them concentrate
• To feel 'better'
• Peer pressure
• Weight control
• Comfort
NHS

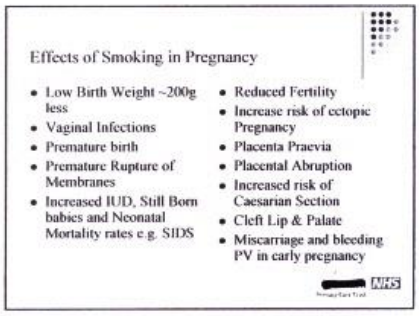

• QUESTION!
• Why do people find it difficult to quit?
NHS

2


Why do people find it difficult to give up?
• Addiction
• Withdrawal Symptoms (in terms of nicotine, these are temporary)
• Fear of failure
• Guilt
• Don't want to
• Not convinced about the harm
• Fear of weight gain
• Peer pressure
• Bad experience quitting before
• Lack confidence

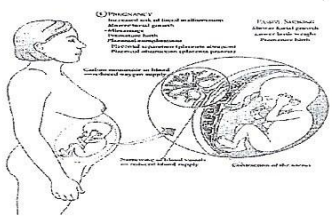

3 Elements to dependance
• Physical:
• The body gets used to nicotine and so when it doesn't get it they suffer withdrawal symptoms
• Dosage needs to be continuously increased to maintain the effect
• Withdrawal symptoms during abstinence
• Automatic habit:
• People get used to smoking at certain times, in certain places and with certain people
• It becomes routine/compulsive use
• Emotional (psychological):
• People feel they need to smoke to cope with things or deal with certain situations
NHS


QUESTION!
What are the effects of smoking in Pregnancy?
NHS


Effects of Smoking in Pregnancy
• Low Birth Weight ~200g less
• Vaginal Infections
• Premature birth
• Premature Rupture of Membranes
• Increased IUD, Still Born babies and Neonatal Mortality rates e.g. SIDS
• Reduced Fertility
• Increase risk of ectopic Pregnancy
• Placenta Praevia
• Placental Abruption
• Increased risk of Caesarian Section
• Cleft Lip & Palate
• Miscarriage and bleeding PV in early pregnancy
NHS

3

Effect of Carbon monoxide on foetus



Brief Interventions!

[redacted] NHS
Primary Care Trust

Brief Interventions for smoking cessation are about

- Raising the issue
- Exploring what smoking means to the individual
- Enabling the smoker to believe that she could stop smoking if she chose to do so.
- Checking levels of knowledge and beliefs about smoking
- Correcting misinformation
- Giving further information, advice and support
- Referring to specialist service.

[redacted] NHS
Primary Care Trust

What we should be doing?

- **ASK -** About smoking at every opportunity
- **ADVISE -** All smokers to STOP with the emphasis on the positive aspect of quitting - Cutting Down does not help long term -
  - **URGE PARTNER TO STOP**
- **APPLAUD -** For not smoking and for continuing not to smoke
- **ARRANGE -** Some help if they want to QUIT - Refer them to specialist help i.e. Pregnancy Stop Smoking Specialist Adviser
- **ASSIST -** The smoker to stop - using specialist smoking cessation help on a one-to-one basis
- **AND -** Give continued help and support throughout their pregnancy include partners/families.

Warn about relapse being part of the process of Giving up Smoking

"PREGNANT SMOKERS SHOULD BE GIVEN FIRM AND CLEAR ADVISE TO STOP SMOKING THROUGHOUT PREGNANCY AND GIVEN ASSISTANCE WHEN IT IS REQUESTED"

Raw et al
THORAX 2000

[redacted] NHS
Primary Care Trust

4

What we need to ask & How to ask!

- Do you smoke?
- Would you like to quit? Or How do you feel about your smoking?
- Would you like some help and support to quit?
- Do raise the question with every pregnant women you see
- Listen to what she is saying
- Don't be judgmental
- Do state clear and simple advice

[redacted] NHS

Raising the question with pregnant women…

- Don't hesitate to ask the question. If you hesitate, they will hesitate in answering your question.
- Ask smoking status as a routine care.
- If you feel they are annoyed with professionals constantly asking them about smoking, DO tell them 'IT IS the LAST time you are asking them, and you wont ask again'.
- Do outline the benefits of getting help and making quitting easier for them if they access the service.

To bring a behavioural change, an individual…..

- Must have an incentive to change
- Feel threatened by their current behaviour
- Feel a change would be beneficial in some way and have few adverse consequences
- Must feel competent to carry out the change
- But changing behaviour is never easy.
- Knowing that you should be making changes, often only adds to feelings of guilt, failure and hopelessness

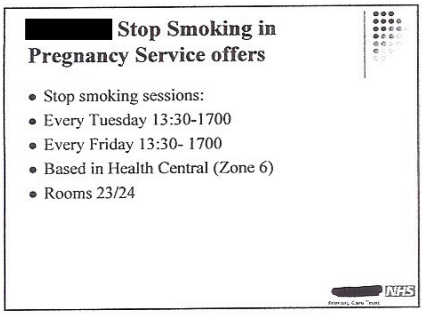
[redacted] NHS

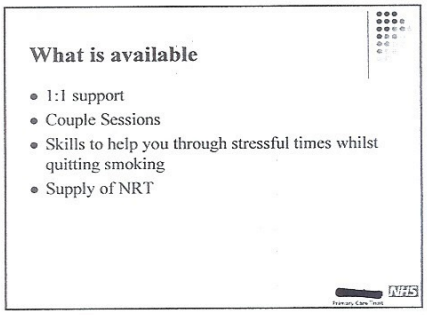
Stop Smoking in Pregnancy Service!

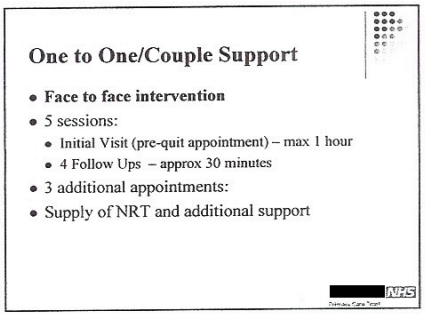
[redacted] Stop Smoking in Pregnancy Service

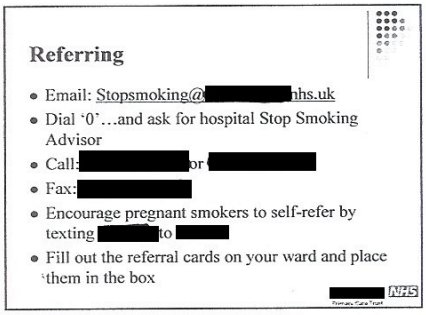
[redacted] NHS

5

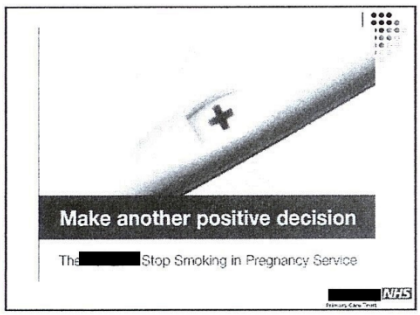

[redacted] Stop Smoking in Pregnancy Service offers
• Stop smoking sessions:
• Every Tuesday 13:30-1700
• Every Friday 13:30- 1700
• Based in Health Central (Zone 6)
• Rooms 23/24
[redacted] NHS

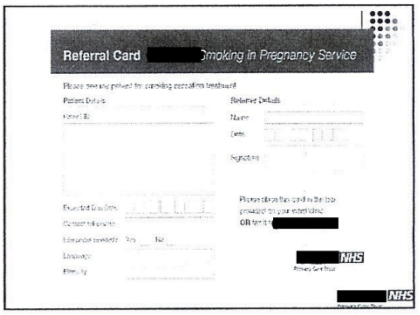

What is available
• 1:1 support
• Couple Sessions
• Skills to help you through stressful times whilst quitting smoking
• Supply of NRT
[redacted] NHS

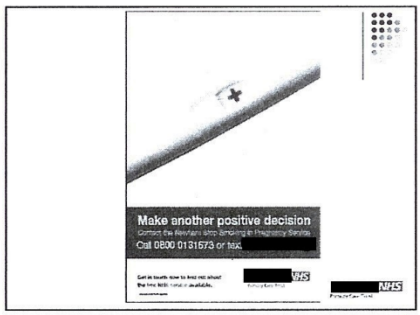

One to One/Couple Support
• Face to face intervention
• 5 sessions:
• Initial Visit (pre-quit appointment) – max 1 hour
• 4 Follow Ups – approx 30 minutes
• 3 additional appointments:
• Supply of NRT and additional support
[redacted] NHS

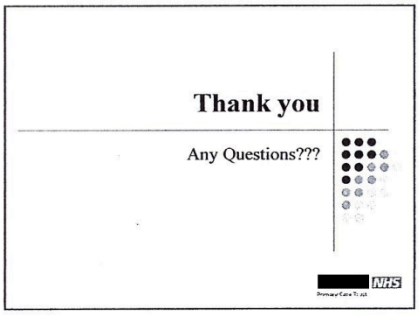

Referring
• Email: Stopsmoking@[redacted]nhs.uk
• Dial '0'…and ask for hospital Stop Smoking Advisor
• Call: [redacted] or [redacted]
• Fax: [redacted]
• Encourage pregnant smokers to self-refer by texting [redacted] to [redacted]
• Fill out the referral cards on your ward and place them in the box
[redacted] NHS

6


Make another positive decision
Stop Smoking in Pregnancy Service
NHS


Referral Card
Smoking in Pregnancy Service
NHS


Make another positive decision
NHS


Thank you
Any Questions???
NHS

7

Appendix II

NHS
Primary Care Trust

Training Evaluation Form- Level 1 Smoking Cessation

Please tick:

	Very Good	Good	Average	Poor	Very Poor
1. Overall, how would you rate the training?					
2. How would you rate the course facilitator(s)?					
3. How would you rate the training content					
4.Packs you have received					
5.Venue					

4. Which part of the training did you find most useful?

5. Which part of the training did you find least useful?

6. Did the training meet with your expectations? YES ☐ NO ☐

7. If not, please could you briefly explain why they were not met?

8. What changes would you make to the training?

9. Do you feel confident about raising the issue of smoking and advising/referring people onto services as a result of this training? YES ☐ NO ☐

Please turn over

10. If not, what do you feel should be included in the training to help you feel more confident?

11. Please add any other comments you have on the content or delivery of the training

Thank you completeing this evaluation form. Please note that the information you have provided will be used to help us improve the training programme only.

Please send completed evaluation forms to: Sonia Zafar, Stop Smoking Team, [redacted] Primary Care Trust, Public Health Directorate, [redacted] London [redacted]

SECTION C

Professional practice

Teaching & Training Competence

Unit 4

A teaching session on 'Smoking in Pregnancy' for ESOL Level 3 students

A Teaching Session on 'Smoking in Pregnancy' for ESOL Level 3 Students

4.1 Plan and design training programmes that enable students to learn about psychological knowledge, skills and practices

The Pregnancy Stop Smoking Service of a London-based NHS trust regularly trained midwives and maternity care staff on smoking cessation. The purpose of the training was to enhance the skills and competencies of health professional staff in raising the issue of smoking cessation in pregnancy and feeling confident in referring clients to the specialist service. I had an opportunity to develop and provide teaching 'English for Speakers of Other Languages' (ESOL) for students enrolled on the 'English for Child Care' course. The course is for students living in the UK, and whose second language is English. The purpose of the course is to study English in the context of childcare.

I was approached by the course coordinator from a London-based college to deliver a teaching session on 'smoking behaviour' to the 'English for Speakers of Other Languages (ESOL) level 3 'English for Child Care' students at this college. This was a great opportunity for me to develop my skills in teaching and training with a different target population. Although students were on the same course, their level of knowledge was different, so I was faced with the challenge of addressing the varying knowledge levels that were present.

The course contains students from diverse backgrounds with a significant diversity in literacy levels. In addition to delivering a teaching session on 'smoking behaviour and change' to this group of students, there was an identified need to raise the profile of the smoking cessation specialist service amongst young women of childbearing age. A

contributing reason for this might be that they are identified as a group who do not access healthcare services. One possible reason for this could be that many ethnic minority groups are not fully aware of the services provided, and furthermore also face many barriers in accessing these (Szczepura, 2004, 2005; Atkinson et al., 2001). My role here was to deliver teaching to a young group of ethnically diverse students. The course coordinator further highlighted the relevance of the topic to students on the ‘child care’ course, as well as its personal relevance to them. The ideal way to approach this population would be through school/college nurses. However, due to limited funding this was not possible. Delivering teaching at colleges seemed to be an ideal way to deliver relevant key messages in relation to health and to raise awareness of smoking cessation in students on this course.

As assessed by the course coordinator, there was a need for teaching this 'module' to this group. A learning needs-based assessment was carried out prior to delivering the teaching. Thus, I had an overall audience profile (Verderber, Verderber & Sellnow, 2008) along with the students’ language levels. The approach for teaching as well as the method came as part of the process during the development of teaching material. I was also required to develop and deliver the material suited to the students’ understanding. After an amount of communication (via telephone calls and emails), the course coordinator highlighted certain aspects, e.g. level of English, previous (if any) knowledge of smoking cessation, of which I needed to be aware. Having regular communication with the course coordinator and an outline of the course content helped me to develop the training material suitable for this group. I also confirmed with the course coordinator there were not any students with identified learning difficulties on

the course.

The aims of the session were as follows:

- To raise awareness of the Pregnancy Stop Smoking Service and its accessibility as well as availability.
- To foster learning on the importance of smoking cessation in pregnancy and child care.
- To foster learning and enhance inquisitive inquiry on the effects of smoking
- To understand smoking behaviour and how to change that behaviour.

In order to enhance learning in students, a number of different teaching strategies were applied during the session. Firstly, an interactive session was one of the key aspects I wanted to embed through having shared group work with a supplementary PowerPoint presentation/discussion. In addition to this, visual aids (jar of tar, display table of cigarette contents and a jar of phlegm) were used to accommodate the language barrier (Allen, 1983), and to increase comprehension of the discussions. These resources are used in my daily practice with clients in order to demonstrate a visible picture of smoking consequences. Using them in the teaching session helped me to describe certain aspects of smoking. It further facilitated learning in students, through the use of visual aids. Furthermore, I developed a quiz which aimed to encourage students to remember what they had learnt during the session.

4.2 Deliver such training programmes

After having planned the teaching session (please see Appendix I for the teaching plan), I felt confident to teach this group even though most of my experience of

teaching/training was with health professionals. However, because of my previous experience in teaching psychology to students, this session helped me reflect on my progress since then. Due to the regular midwifery training (on smoking cessation) that I delivered at the local hospital, I felt competent in the study area as well as in speaking to a larger audience. A three-hour teaching session was planned for the class. After having introduced ourselves, I started the session with the relevant course material (please see Appendix II). This was delivered at a pace suitable for students, and in an interactive manner, as can be seen from the material. All students were provided with a learning pack consisting of literature published from NHS and NICE on effects of smoking in pregnancy, and were actively encouraged to participate in class. This was carried out through encouraging the students to ask questions during the session and having class discussions in plenum, as well as creating a comfortable and open class environment for the students.

The majority of the students were reluctant to participate in the beginning, but using 'ice-breakers' helped the students to be more open to discussion and debate during the session. The class was encouraged to raise questions in plenum. This at times led to a more interactive session rather than a 'lecture-style' teaching, and helped me to implement a learner-centred approach (Weimer, 2002; Gibbs & Coffey, 2004). This would increase student engagement with the topic, and increase student learning as well as retention (Blumberg & Everett, 2005). Rather than traditional teaching methods (McBride & Wahl, 2005), I aimed to adopt a multi-interactive session to increase students’ participation in learning. This seemed to be more suitable for this group and it encouraged and facilitated learning. However, using a variety of methods and a quiz

(please see Appendix III for the quiz) made it interesting as well as meaningful. The students left the session having learnt about smoking in pregnancy as well as second - and smoke, etc.

My continuous teaching/training has been regularly logged, which has clearly demonstrated improvement, development through experience, evaluation and reflective practice. Certain skills that I feel have greatly improved are as follows:

- Professional attributes and skills (clearer and good pace in speech), engagement (eye contact), confident posture (relaxed and open).
- General confidence in speaking to a large group of people (students/healthcare professionals).
- General confidence in appearing in front of others to deliver teaching.
- Effective preparing and planning of teaching and time management.
- Interpersonal communications.

4.3 Plan and implement assessment procedures for such training programmes

Due to the nature of the course, users were of different learning capabilities, meaning that tailoring the teaching to the students' needs was challenging. I had identified methods that were fair and appropriate to all students, and would encompass the different levels of learning. I concluded that an evaluation of their understanding and confirmation of what they had learnt was appropriate. A small quiz was developed to assess their knowledge and understanding of the subject after the session. After the students had finished the quiz, I went through the answers as a group exercise where we

discussed the answers, etc. After the session, all students were given an evaluation form (please refer to Appendix IV for the evaluation form). When developing the evaluation form, I was particularly aware of the level of English language the students possessed. When the students were asked to complete the evaluation form, it was also noticed that they did not approach each other, the facilitator or me to clarify anything, as opposed to in lectures, where they had casually raised any shortcomings in understanding.

4.4 Evaluate such training programmes

During breaks, discussions took place between the session coordinator and I, to ensure that the pace of conversation, the materials and explanations were interesting and, more importantly, the right level of English was used for the comprehension levels of the students. The outcomes of these discussions assured positive progress. After I finished the session, I spent fifteen to twenty minutes reflecting on it with the course coordinator. It is slightly challenging to deliver a session on 'smoking' to a group where some of the students are smokers, as they usually object to some of the facts. However, I had to maintain a professional attitude towards their opinions and understanding. This helped to understand that I can always improve in delivering teaching sessions as different challenges arise with different groups.

Completed evaluation forms are available on request. Below is a brief summary of what the evaluation showed –

- The content and use of language was delivered at an appropriate and effective level.
- The aims and objectives were met and there was a clear summary and

conclusion.

- Student feedback indicated that the learners felt information was sufficient and that it was presented at a digestible pace. Majority of them agreed that the session was of good quality.

Summary and Conclusion

The key learning point(s) that I have gained from this teaching experience are as follows:

- An understanding of the difference in teaching/training to different target groups (students and healthcare professionals).
- Importance of ensuring that the material is appropriate to the learners' standard of comprehension with reference to language, delivery method and previous knowledge. Identifying and applying different teaching methods and approaches that suit the different groups.
- Improved time management, session planning, and information delivery, as well as being creative in developing teaching methods.
- Improved on identifying learning objectives and aims of a session.
- Identifying and applying strategies to enhance student participation in the process of learning

The evaluations suggested that the session had met its aims and objectives. In the future, I would deliver a session on smoking and reproductive health. I would also want to engage the students in practical exercises and use more visual images that would facilitate further learning, primarily because English is not their first language. Using

other (visual/practical) exercises could possibly enrich their learning from a different perspective.

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Appendices

Appendix I

NHS [redacted]

'Smoking in Pregnancy'

Presented by: Sonia Zafar –Pregnancy Stop Smoking Specialist

23rd October 2009

09:30 – 13:00

09:30 Welcome and introductions

10:00 Presentation I – Smoking

10:45 Break

11:00 Group Work

12:00 Presentation II (Pregnancy Stop Smoking Service)

12:30 Close

Thank you

Appendix II

Smoking in Pregnancy

Sonia Zafar
Pregnancy Stop Smoking Specialist/Health Psychologist in Training
NHS [redacted]/City University

October 2009

SMOKEFREE

Aims

- The aim of this session is to
- Understand smoking behaviour and stopping
- Inform you of the effects of smoking in pregnancy
- Inform you of the Newham Pregnancy Stop Smoking Service
- How to access service and what is available

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Objectives

By the end of this lesson:

- Be aware of the local and national context for smoking
- Briefly explain underlying concepts within behaviour change.
- List the reasons why people smoke and identify barriers to quitting
- Outline effects of smoking on your health and for those around you in pregnancy and post pregnancy
- Be aware of what is available
- Contact the pregnancy Stop Smoking service when/if you want to refer

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What is smoking?

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Smoking

- Complex combination of:
  - Behaviours
  - Social factors
  - Psychological factors
  - Pharmacological dependence
- Smoker gets positive reinforcement of:
  - The effect they perceive they get from smoking
  - The pharmacological effects of nicotine
- Smoker gets negative reinforcement:
  - Withdrawal symptoms reminds them to smoke again

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Elements to dependence

- Physical:
  - The body gets used to nicotine and so when it doesn't get it they suffer withdrawal symptoms
  - Dosage needs to be continuously increased to maintain the effect
- Automatic habit:
  - People get used to smoking at certain times, in certain places and with certain people
  - It becomes routine
- Emotional (psychological):
  - People feel they need to smoke to cope with things or deal with certain situations

SMOKEFREE

1

10/23/2009

Some health effects

- Tobacco smoking is linked to 25 diseases
- 50 % of people who smoke will die of a smoking related illness
- more than 8 in 10 lung cancer deaths are caused by smoking

SMOKEFREE NHS [redacted]

Some more health effects

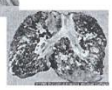
- Hardening of the arteries, causing blockage leading to heart attack

- Increased risk of stroke
- Chronic obstructive pulmonary disease (COPD)

- Emphysema

- And many many more....

Is smoking an addiction?



SMOKEFREE NHS [redacted]

Nicotine Addiction

Definition:

- - Addiction is a behaviour over which an individual has lost control

Signs of addiction:

- Continued substance use despite knowledge of harmful effects
- Tolerance (Need for increasing amounts of the substance to achieve desired effects)
- Withdrawal symptoms (e.g. irritability, cravings)
- Persistent uncontrolled use of substance. Unsuccessful attempts to limit use.

SMOKEFREE NHS [redacted]

How many people smoke

22% of people are regular smokers in the UK

Source - Smoking and Drinking 2006 - ONS 2008

23% men
21% women

36% of people in unemployed and very low paid groups
15% of people in managerial and professional groups

21% of people in [redacted]moke:
26% men
16% women

Source – [redacted] Household Panel Survey

SMOKEFREE NHS [redacted]

Why do people smoke?

SMOKEFREE NHS [redacted]

10/23/2009

Many different reasons

- Social
- Emotional
- Physical Dependency
- Habit
- Enjoyment
- To cope
- For a break
- To look cool
- To relax
- Ritual
- Addiction/dependence
- Habit
- Boredom
- Reward
- To deal with stress
- To help them concentrate
- To feel 'better'
- Peer pressure
- Weight control
- Comfort

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Who smokes in pregnancy?

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Women who smoke during pregnancy are more likely to

- Single
- Have fewer educational qualifications
- Unemployed / in unskilled occupation
- Living with a partner/family who smokes
- Smoking is the norm in their family
- Have smoked throughout a previous pregnancy
- Be between 16-24 year of age
- 67% of pregnant smokers have a partner who smokes
- 30% of pregnant women smoke during pregnancy (1999)

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But the good news is...

- 8 out of 10 pregnant smokers want to stop
- 1 in 3 pregnant smokers stop smoking before or during pregnancy

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- Even though pregnant smokers know that smoking is harmful for the baby....

Why do they then smoke?

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Smoking and your unborn baby

The umbilical cord is your baby' life line.

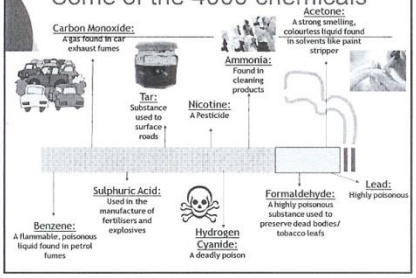
The blood that flows through gives your baby oxygen and nutrients to grow.

When you smoke – you inhale 4000 chemicals from tobacco smoke - NOT OXYGEN!

SMOKEFREE British Medical NHS

3

Some of the 4000 chemicals



Smoking, pregnancy and birth

- Ectopic pregnancy (pregnancy outside uterus)
- Miscarriage
- Baby dying at or shortly after birth
- Smaller baby
- Low Birth weight
- Placenta complications
- And many many more.....

British Medical Association 2004

SMOKEFREE NHS

After baby is born and passive smoking

- Every time someone smokes around you or your children, you are all smoking too. This is called passive smoking or environmental tobacco smoke (ETS). ETS can affect the health of children
- Cot death/ Sudden Infant death syndrome
- Higher risk of asthma and respiratory infections
- Middle ear infections
- Bronchitis and pneumonia
- Respiratory illness...so more likely to cough at night

British Medical Association 2004

SMOKEFREE NHS

Passive smoking and children I

- Almost half of all children in UK are exposed to tobacco smoke at home
- Reduced lung function and increased severity in asthmatic babies/children
- Possibly linked to cardiovascular problems and behavioural problems in children
- 2/3rds of Cot Deaths could be avoided

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Passive smoking and children II

- Children of parents who smoke inhale amounts of nicotine equal to smoking 60-150 cigarettes a year
- 17,000 children under age 5 admitted to hospital with effects of passive smoking
- 8 out of 10 children who smoke have a parent who smoke
- Possibly linked to cardiovascular problems and behavioural problems in children

SMOKEFREE NHS

Breastfeeding and smoking - facts

Breast milk protects your baby against infection!

Mothers who smoke are less likely to start breastfeeding or breastfeed for a shorter period of time- 250ml milk per day is reduced

FACT:
Breast is best!

BUT what if you smoke?

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To bring behaviour change

- Must have an incentive to change
- Feel threatened by their current behaviour
- Feel a change would be beneficial in some way and have few adverse consequences
- Must feel competent to carry out the change.

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I smoke…I can't stop…what do I do?

As a mother, protect your baby's health by not smoking and by asking family and visitors to always go outside to smoke

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Have a break

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QUIZ

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1. What percentage of adults in the UK are regular smokers?

22 %

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2. List 3 major complications linked to smoking in pregnancy

1. The major cause of foetal and infant ill health and death
2. Ectopic pregnancy
3. Miscarriage
4. Reduced foetal growth and low birth weight
5. Placental complications

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5

3. In which age group are the highest number of pregnant female smokers?

A) 16-24

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4. In breastfeeding mothers who smoke, milk output is reduced by how much?

B) 250ml/day

Mothers who smoke are less likely to start breastfeeding or breastfeed for a shorter period of time

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5.What percentage or pregnant women are smokers in the UK?

C) 30% of women reported to be smoking in pregnancy in 1999

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6. List 3 major problems associated with exposure to second hand smoke after the birth

1. Cot death (SIDS):
   - Risk approximately 3x greater in infants whose mothers smoke both during and after pregnancy
   - More cigarettes smoked, the greater the risk
   - Exposure to second hand smoke – 2x greater risk
2. Lung function
3. Respiratory illness:
   - Can cause asthma and increases severity of the condition in those who already have it
   - Increased risk of breathlessness, phlegm, coughing and wheezing
   - Cause of lower respiratory tract illnesses – croup, bronchitis, bronchiolitis and pnuemonia

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7. How many chemicals are there in tobacco smoke?

C) 4000

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8. How many pregnant smokers stop smoking before or during pregnancy?

A) 1 in 3 of those who smoked stopped either just before or during pregnancy

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9. How many pregnant women who smoke want to stop?

D) 8 out of 10 who smoke want to stop

- However, only 1 in manage to do so

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10) Why do people smoke?

C) All listed reasons and many more.

- People smoke for various reasons, boredom and socialising are only a few.

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Stopping smoking and the options available

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Why is it hard to stop?

- Addiction/dependence
- Withdrawal symptoms
- Fear of failure
- Guilt
- Don't want to
- Not convinced about harm it causes
- Fear of weight gain
- Peer pressure
- Bad experience of stopping before
- Lack of confidence

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Withdrawal symptoms

- Withdrawal symptoms play a big part in keeping people 'hooked' on a drug
- Can be physical and mental and happen when drug use is interrupted or withdrawn
- In terms of nicotine, withdrawal symptoms are temporary

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What people might experience?

Symptom	How long does it last?	How many people suffer?
Irritability/aggression	< 4 weeks	About 50%
Depression	< 4 weeks	About 60%
Restlessness	< 4 weeks	About 60%
Poor concentration	< 2 weeks	About 60%
Increased appetite	> 10 weeks	About 70%
Light headedness	< 48 hours	About 10%
Cravings	> 2 weeks	About 70%
Warming of the skin	Long term	> 80%
Drop in heart rate	Long term	About 80%
Mouth ulcers	Short term	Not known
Pins & needles	Short term	Not known
Headaches	Short term	Not known
Aches, pains & coughs	Short term	Not known

7

Benefits of stopping

20 minutes	Blood Pressure and pulse return to normal. Circulation improves, especially to hands and feet- and your baby gets oxygen
8 hours	Blood oxygen levels increase to normal, and your chances of having a heart attack start to fall.
24 hours	Carbon monoxide leaves the body. The lungs start to clear out mucus and debris.
48 hours	Your body is now nicotine free. Your senses of taste and smell begin to improve.
72 hours	Breathing is easier.

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More benefits of stopping

2-12 weeks	Circulation improves throughout the body. Walking and exercise get easier.
3-9 months	Breathing problems, coughing, shortness of breath and wheezing improve. Lung efficiency increased by 5-10%.
5 years	Risk of having a heart attack falls to about half that of a smoker.
10 years	Risk of lung cancer falls to around half that of a smoker. Risk of heart attack falls to about the same as someone who has never smoked.

SMOKEFREE [redacted]

The Pregnancy Stop Smoking Service

Make another positive decision

[redacted] Stop Smoking in Pregnancy Service

Support from an advisor

[redacted]

- minimum of five 30-60 minute, weekly face to face sessions
- practical and emotional support, dealing with cravings, withdrawal symptoms, set a quit date and work out an action plan
- access to Nicotine Replacement Therapy (NRT) patches, gum etc. for up to 12 weeks
- continued follow up at 6 and 12 months

SMOKEFREE [redacted]

Nicotine Replacement Therapy (NRT)

Thank you

Questions?

SMOKEFREE [redacted]

Appendix III

Smoking and Reproductive Health Quiz

1. **What percentage of adults in the UK are regular smokers?**

a) 2%
b) 33%
c) 10%
d) 45%
e) 22%

2. **List 3 major complications linked to smoking in pregnancy**

i) .....

ii) .....

iii) .....

3. **In which age group are the highest numbers of pregnant female smokers?**

a) 16 – 24
b) 25 – 34
c) 35 - 44

4. **In breastfeeding mothers who smoke, milk output is reduced by how much?**

a) 50ml/day
b) 250ml/day
c) 100ml/day
d) 20ml/day

5. **What percentage or pregnant women are smokers in the UK?**

a) 25%
b) 35%
c) 30%
d) 42%

6. **List 3 major problems associated with exposure to second hand smoke after the birth**

i) .....

ii) .....

iii) .....

7. **How many chemicals are there in tobacco smoke?**

a) 400
b) 40
C) 4,000

8. **How many pregnant smokers stop smoking before or during pregnancy?**

a) 1 in 3
b) 1 in 20
c) 1 in 100
d) 1 in 6

9. **How many pregnant women who smoke want to stop?**

a) 5 out of 10
b) 6 out of 10
c) 1 out of 10
d) 8 out of 10

10) **Why do people smoke?**

a) Only for social reasons
b) Only because it is an addiction
c) All listed reasons and many more
d) Only because smokers are bored

Appendix IV

NHS [redacted]

EVALUATION FORM

Smoking in Pregnancy

[redacted] College of Further Education – English for Child care

23rd October 2009

Please **circle a number** between 1 and 5 to indicate which response best fits your understanding of the session.

Please answer all the statements according to the following 1 to 5 scale:-
1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA)

		SD	D	N	A	SA
CONTENT						
1	The use of English was at an appropriate and effective level.	1	2	3	4	5
2	The content was useful to my further education	1	2	3	4	5
3	I gained a lot of new information	1	2	3	4	5
STRUCTURE						
4	There was a clear introduction to the subject.	1	2	3	4	5
5	The aims and objectives were clearly stated.	1	2	3	4	5
6	The aims and objectives were clearly met					
7	The material was well organised.	1	2	3	4	5
8	There was a clear summary and conclusion.	1	2	3	4	5
PRESENTATION						
9	The presenter appeared well informed about the subject.	1	2	3	4	5
10	The method of the presentation was excellent	1	2	3	4	5
11	Audience participation/interaction was encouraged.	1	2	3	4	5
12	There was effective use of audio visual aids/handouts.	1	2	3	4	5
13	The presentation was given at the right pace.	1	2	3	4	5
OVERALL						
14	Overall, this teaching session was of good quality.	1	2	3	4	5

I **liked** the following things about the session (anything you found to be useful):-

---

The session could be **improved** by:-

Please add any other comments you have on the content or delivery of the session

---

Thank you completing this evaluation form. Please note that the information you have provided will be used to improve the sessions only

SECTION C

Professional Practice

Implement Interventions to change health-related behaviour

Competence

Unit 5.1

Intensive Smoking Cessation Interventions

Intensive Smoking Cessation Interventions

Background

Smoking cessation interventions were implemented for inpatients, outpatients and staff, and a specialised intervention service was designed for pregnant smokers and their partners in an East London hospital. The interventions are implemented in community settings, pharmacies and general practices, or in secondary care, i.e. hospitals. The smoking cessation interventions consist of adopting different behaviour change techniques (usually cognitive behavioural skills, motivational interviewing, etc) and Nicotine Replacement Therapy, as well as intensive one-to-one sessions to change behaviour. This occurs with a specialist advisor for twelve weeks (unless otherwise agreed) and although the intervention applies principles from other theories and behaviour change models (social cognition models), it is framed around the Stages of Change (SoC) model (Prochaska & DiClemente, 1982).

The relation between infant mortality and smoking is well-established (Kleinman et al., 1988; Hofvendahl, 1995; Boffetta, Tredaniel & Grecco, 2000; Gray et al., 2009). This borough of London has one of the highest infant mortality rates in the country (Report on Infant Mortality 2008, [redacted] PCT). Prior to this, the Stop Smoking Service lacked a strategic plan for targeting this high-risk group of smokers. Pregnant smokers in this area of London had not previously received any specific specialised treatment for smoking behaviour. The specialist intervention was developed due to the high rates of smokers as well as the identified need for it (Report on Infant Mortality 2008, [redacted] PCT). The overall intervention was designed based on Prochaska and DiClemente's Transtheoretical Model of behaviour change (1983) where a stage-based approach was

applied to effect cessation. In order to standardise the treatment, research into the development of an effective intervention for this target group was required. This was based on scientific evidence and best practice examples of implementing research into practice (West, McNeill, Britton et al., 2010; McEwen, West (2000); McEwen, West (2010; Berg, Kirch, Guo, 2010). At a practical level, I also liaised with colleagues and collaborated with existing services that had been successful in their applied approaches. The aim of the intervention is to:

- Improve quality of health by offering treatment and support and tools to make suggested behaviour changes.
- To support and provide the client with skills and techniques to change smoking behaviour.
- Support the client during the behaviour change and adjustment.
- Improve confidence/self-efficacy with the new behaviour.
- Minimise possible (re)lapse.

It is expected that the intervention will result in a change of behaviour that improves the client's general health, and that they are adjusted in their new changed behaviour. The duration of each session varies, but on average each session lasts approximately thirty to forty-five minutes.

a) **Assess the suitability of client/s for health-related behaviour interventions**

According to the NICE guidelines (March 2006), all clients should receive brief interventions, one-to-one behavioural support or group-based therapy depending on

their needs. Through my practice in implementing interventions, I have received referrals from secondary care units, local community services and GP practices. Most of the clients I have seen are pregnant women who smoke, and inpatients who have experienced a stroke or have serious emphysema, and other regular inpatients at the hospital who wish to stop smoking.

I have encountered a small number of clients with mental health problems who have wished to change smoking behaviour. My experience with these clients suggests there is the need for a tailored, structured and consistent approach to help these clients in their attempt to stop smoking.

In order for the implementation of the intervention to become efficient and sustainable, I ensured the service was integrated into existing maternity care services to make sure it became a component of the overall care pathway for pregnant women.

The majority of the clients were referred from the Maternity Booking clinic and a small number from the antenatal clinic. This was agreed in the protocol when the procedures for the service were being developed.

When assessing the client's suitability to change their behaviour, the following points are referred to:

Important aspects when assessing the client's suitability to change behaviour:

1. How (from a scale of 1-10) much is the client motivated to stop? Usually asked

informally.

2. Client's reason(s) for wanting to change their behaviour.
3. Potential barriers the client could face during this process (personal/social).
4. Client's understanding of what is required from them in order to change their behaviour.
5 What client thinks/understands is (in)effective.
6. Client's expectations about the intervention.

All the above-mentioned points are accounted for during a dialogue process. The client's medical history, personal and social circumstances are also taken into account as well as any identified factors that could have an effect on their behaviour change (both positive and negative).

b) Identify and negotiate the behaviour change goals of the client/s

In the first session the client is asked to set a quit date and goals for behaviour change. These goals depend on the client's motivation. A motivated client is encouraged further by the suggestion of setting a quit date, completing a behaviour change diary and making incremental changes daily with the aim of meeting the quit date. A less motivated client who needs to stop smoking (due to pregnancy) is encouraged to take up a course of action by way of engagement in a 'debate' on the pros and cons of smoking, in so doing initiating a therapeutic intervention. The key goal of this session for the client is to understand the concept of being smoke-free as well as the need to have a high level of motivation and dedication. I apply skills which have been documented as effective in behaviour change interventions (Miller & Rollnick, 2002; Beck, 1995;

Carver & Schneider, 1998). Most common environmental and personal contingencies which lead to and maintain the smoking behaviour are social gatherings, boredom, stress, coping mechanisms and minimal knowledge of harmful effects/false beliefs of smoking (Lazev, 1999; Han et al., 1999; Smedley et al., 2000). One of the objectives of the interventions was to address these.

c) Assess the cognitive, behavioural and situational determinants of relevant current behaviour

Assessing the client's cognitive framework is one of the challenging areas of implementing interventions. The client is requested to outline the behavioural, psychological and situational determinants of their smoking behaviour. The client defines these by reflecting on their own smoking behaviour, i.e. when and why they smoke. The influence of past behaviour on behaviour change is determined by the client's daily challenges when trying to eliminate past behaviour. The client is very 'vulnerable' to submitting to past behaviour when faced with challenges. Challenges often mentioned by clients range from 'not being able to break a routine', e.g. the morning cigarette, hands being free, not wanting to gain weight but constant 'urge' for sweets/junk food. During the follow-up sessions, it is assessed how these challenges are coped with and the varying level of motivation is addressed throughout the process of quitting.

The success in achieving the target behaviour; quitting smoking, is heavily influenced by the motivation of the patient as well as by past and current behaviour. Previous experience suggests that if a client manages to change their behaviour (stop smoking)

without a setback (relapse) for more than four weeks, he/she is less likely to have a full relapse leading from minor setbacks (lapses) through the first four weeks of quitting (Hajek et al., 2009), as active engagement in the initial phases of the treatment is used to learn new skills and habits (Marlatt, 1984). In addition to intensive behavioural support, treatment as well as long-term abstinence is even more effective with Nicotine Replacement Therapy (NRT) (Aveyard et al., 2007; Sutherland, 2003; West & Zhou, 2007).

A large number of clients have certain beliefs about smoking and pregnancy. An example of such a belief is that cutting down smoking reduces the risks associated with smoking in pregnancy (Cheryl & Wendy 2004). Through detailed sessions with the client, the aim is to elicit cognitions and underlying false beliefs associated with current smoking behaviour.

I use resources (please see Appendix I) to demonstrate and explain the effects of smoking on the reproductive life and in pregnancy. This reinforces change in perceived effects of smoking and is easier for a layperson to comprehend (by using visual images) (Van Leeuwen & Jewitt, 2001; Emmison & Smith, 2000). Initially the client completes a monitoring form (please see Appendix II for the monitoring form). Pregnant clients are requested to provide further consent (please see Appendix III for the consent form). The monitoring form and the consent form are used to monitor client details as well as provide a general summary of their progress and to monitor the usage of NRT products.

d) Develop a behaviour change plan based on cognitive-behavioural principles

The client is also given a behaviour change diary as well as other resources (Department of Health, 2010) which will support clients when trying to change behaviour; however, more specifically, in this instance it will support the client in stopping smoking.

When the client is given resources in the first session, I thoroughly go through how the educational resources (i.e. diary, calendar, leaflets) should be used and referred to. The client is also encouraged to discuss any associated beliefs related to their smoking and is provided with information that can remind them of the unrealistic underlying beliefs associated with their current behaviour.

Below (Table 1) is an outline of the plans for behaviour change based around cognitive behavioural principles.

Table 1: Some potential barriers identified prior to quit date

Cognitive Barriers	**Behavioural Barriers**	**Situational Barriers**
Feel the need to smoke	Hand-mouth movement	Friends/family smokers
Need to smoke for stress relief	Hands feel empty	Socialising
Belief: Single/few cigarettes do not harm	Spare time	Smoking is norm
Cutting down is just as efficient (if not more) as quitting altogether	Boredom	Old routine

Lack of stress management skills	Prone to stress and therefore high chance of relapse	Stressful encounters (social/personal)

Below (Table 2) is an outline of the facilitators identified that play an active role in changing and facilitating the behaviour change for the client.

Table 2: Some facilitators identified

Cognitive Facilitators	**Behavioural Facilitators**	**Situational Facilitators**
Completely refraining from smoking	To provide client with 'gadgets' to use to keep hands busy	Changing social network or refraining from interacting with smokers for a period
Having understood that one cigarette is a sign of a potential relapse	Being equipped with resources	Changing routine
Apply self-image as non-smoker	Having ability/confidence to change	
	Breaking smoking ‘rituals’ and the collection of habits	

If the hand-mouth barrier is significantly implied by the client then they are usually given the NRT inhalator to use to keep their hands busy. Through practice, a number of clients reported that this helped them significantly.

Over a three-month period the client is called for twelve sessions, or more if needed, and is seen every week to discuss barriers and reduce the likelihood of a lapse occurrence. This process also involves stress management techniques so the client is much more equipped and less vulnerable to a relapse. After a period of four weeks of consecutive sessions, the client is assessed on their progress with the change in behaviour. They are either seen fortnightly or more frequently; some continue every week when it has been identified that there may be the existence of resilience to change or an increased probability of relapse. This procedure is not common in practice but as a trainee psychologist I feel it is important to implement the interventions as they suit the client so their needs are met. I feel being flexible on certain occasions is just as important as being firm on others. Having designed and implemented a service that has achieved the highest number of pregnant quitters in London has greatly improved my confidence and competence in delivering behaviour change interventions

e) Ensure Monitoring and support for behaviour change plan

Baseline data is gathered at the first session and forms part of the monitoring form (please refer to Appendix II). The questions on section ‘X’ (on the monitoring form) are a part of the Fagerstøm Test for nicotine dependence (1991) and are designed to assess nicotine dependence. This allows for targeted Nicotine Replacement Therapy (NRT) for the greatest probability of success. Alongside this, a carbon monoxide reading is taken. Pregnant clients sometimes hesitate to respond and self-report appropriately as many are 'ashamed' of their behaviour as they are aware that smoking in pregnancy is harming the unborn baby but still engage in the smoking behaviour. This poses feelings of guilt, which might be the reason for inaccurate self-reporting. This is quite often evident from

their response which does not match their carbon monoxide reading (Campbell, Sanson-Fisher & Walsh., 2001; Shipton et al., 2009). However, having had workshops in therapeutic skills and counselling skills, I try to develop an environment that is open in order to gain the client's trust. My relationship with most clients has been comfortable, and open, hence allowing them to be honest with the challenges that follow smoking behaviour change. The clients are regularly encouraged to discuss any issues that can interfere in their behaviour change. This has, however, proven to be very challenging in some instances as clients can discuss issues with which I have not been trained to engage. The DPsych Workshops led to skills being acquired that facilitated the conquering of these challenges. There were also regular one-to-one meetings with the manager and DPsych supervisor to discuss any difficulties. At every session, the client is encouraged to report any lapses or full relapse, and the client usually reports accurately – as a result of the established trust and empathy. However, in certain circumstances the client has not reported accurately – as suggested by the carbon monoxide monitor – yet, rather than disagreeing with the client on inaccurate reporting, I instead suggest alterations to the behaviour change plan. The data is analysed weekly so any changes to the interventions can be tailored to suit the client so the behaviour change can occur effectively and efficiently.

f) Evaluate Outcome

After having assessed whether the client completed the twelve-week programme, I assess to what extent the change in behaviour has occurred and how confident the client is with the new behaviour. This is also an opportunity to assess a relapse occurrence in the immediate future. Pregnant smokers often have higher relapse rates than other 'high-

risk' groups (Fingerhut et al., 1990; McBride et al., 1999). Pregnant women who smoke face more barriers in quitting cigarettes (Nichter et al., 2006; Ershoff et al., 1999) and are also more reluctant to uptake smoking cessation services (Baxter et al., 2010). They have also been identified as a group that require specialist treatment (NICE, 2008; Mayer et al., 1990). It is also a known fact that when pregnant the nicotine is absorbed at a faster rate compared to clients who are not pregnant (Dempsey et al., 2002). These factors further play a role in pregnant clients' process of change.

According to a recent report published by the Department of Health (The Health and Social Care Information Centre, 2009), the specialist service (for pregnant women and their partners) which was developed and implemented as part of the consultancy competence for the DPsych had achieved the highest number of women who were determined to stop smoking (set a quit date), as well as the highest number of pregnant women who had changed their behaviour for four weeks or more (quit for four weeks) compared to any other borough in London.

Please see Figure 1 below for the clients seen in the Stop Smoking in Pregnancy Clinic.

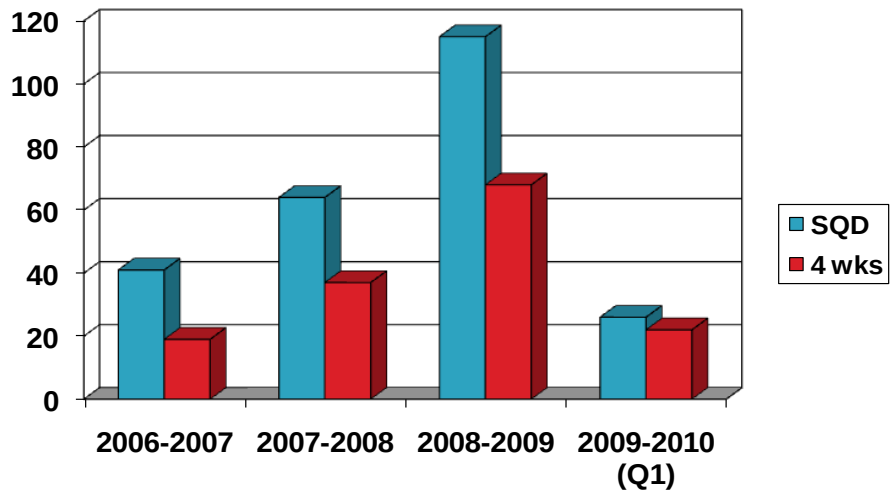

Figure 1: Number of women who set a quit date (SQD), and number of women who have quit through the service

This reflects the extent of the effectiveness of the implemented stop smoking interventions.Majority of the clients have been through the full twelve week cessation treatment contributing towards the increased success of the intervention.

The following components have been identified as effective in the behaviour change process:

- The client setting a quit date.
- Detailed information/elicitation of underlying beliefs/cognition by advisor(s)
- Provide and plan together a behaviour change plan by tailoring it to the client's needs/lifestyle.
- Regular attendance at clinic.
- Take into account any other personal/social factors that can interfere (direct and indirect) with behaviour change and find alternative solutions with the client.
- Discuss and provide a 'letter of recommendation' for the appropriate NRT and information and guidelines on its use.

During the following sessions, I go through the additional details of the behaviour change plan with the client and discuss use of NRT. The need for a revised behaviour change plan is identified if the client has had a (re)lapse or if the recommended NRT product does not suit the client. I have learned the cognitive behavioural techniques from the 'CBT skills for Health psychologists' workshop and other training given through the NHS, as well as from books and other resources which evaluate and explain cognitive behavioural techniques (Marks, 2005; Bennett-Levy & Beedie, 2007; Clarkson, 2003; Michie & Abraham, 2004; Roth & Fonagy, 2005; Beck 1995).

If a client experiences a lapse, the factors that might have facilitated the relapse are discussed thoroughly with the client, and alternative solutions are suggested. At this point, the client needs a more intensive 'therapeutic' session and alternative behaviour change techniques.

In some instances, the client faces a full relapse and fails to change their smoking behaviour. The client can experience feelings of helplessness or sense of failure to comply, even though there might still be a high level of motivation. It is therefore very important that the client regains the confidence to be able to attempt the behaviour change again. Detailed techniques as well as a realistic framework of the process of behaviour change encourage the client to be motivated and set a quit date again.

In certain cases, the goal has not been reached. The lack of goal attainment usually occurs when one of the following occur during the behaviour change process:

- Failure to stick to the quit date and failure to set a new date.
- Low/no attendance at clinic.
- High number of lapses leading to a full relapse.
- Providing consecutive justifications for why behaviour change is not occurring.
- Occurrence of major unexpected events.
- Changing other situations or events in life at the same time as changing smoking behaviour.
- Lack of motivation during the process.

The unintended negative instances usually occur in the first weeks after setting the quit

date. Chest pain and coughing has been reported a few times, as a result of the physiological change.

g. Negotiate completion, follow up or referral as appropriate

Clients are encouraged to attend all recommended appointments, i.e. four times weekly appointments and four times fortnightly appointments over a period of three months. Some clients feel the sessions are too frequent and believe they can complete the intervention programme after several weeks. Clients are given a sense of achievement and encouraged to maintain the change in their behaviour by acknowledgement of their positive change in behaviour by way of a certificate of completion. Pregnant clients are offered home visits after birth in cases of relapse but the intervention is usually completed at the clinic. Home visits are offered as an ad hoc follow-up and not an integrated part of the intervention as such.

In the last appointment, the session covers the behaviour change plan and the intended outcomes set at the beginning of the programme, reflecting on the period over which behaviour change was in process. The carbon monoxide reading is also taken at this occasion to illustrate the drop in carbon monoxide reading, and is done every week to encourage the client and to keep them motivated to refrain from smoking. The client is required to keep some key points in mind to avoid relapse:

- Think of how you feel now compared to before when you were smoking.
- Think of the evident change in your appearance as a result of cessation.
- Think about the efforts you have invested for this behaviour change.
- Smoking a single cigarette or taking a puff is the beginning of smoking again.

On other occasions, I have come across clients who need support in living with certain chronic conditions and wish to stop smoking. In that case I refer them to the Expert Patients Programme (EPP). The EPP is a self-management programme commissioned by the Department of Health (2007) to support lay people living with long-term chronic conditions. Trained advisors carry out home visits to support this group in their behaviour change. A barrier to the effective completion of the intervention was the geographical location of the client in relation to the service centre. In cases where this was apparent the client was referred to other specialist services closer to their home.

After the two years when I have actively implemented interventions in a hospital setting, I can clearly see my progress through my experience and reflection through logbooks. I have also become much more competent in implementing interventions to change health-related behaviour. My experience has taught me invaluable lessons and I have come across various situations that have enhanced my learning in a number of ways. As a result of gaining experience in implementing the interventions, there have been some interesting developments in theory, which may influence practice in the coming years.

The NHS smoking cessation interventions have been framed around the Transtheoretical model/Stages of Change (SoC) model, where individuals can be characterised as belonging to one of the many stages (Prochaska, DiClemente, Velicer et al., 1985; Prochaska & Goldstein 1991; Prochaska & Velicer 1997). Prochaska and Goldstein (1991) highlight that interventions should be developed around the stage at which an individual is at, as this will result in improved effectiveness. There are

different techniques for each stage we aim to implement in interventions to assist clients moving from one stage to the other. The overall theoretical framework that assists the interventions is based around the SoC. For example, some pregnant women who accessed the service were not 100% ready to quit and could be categorised in the pre-contemplation or contemplation stage, but had been referred from the Maternity Booking Centre. These women may not be 100% ready to change their smoking behaviour but can be 'directed' towards action to change behaviour using information, education, behavioural support, carbon monoxide readings, etc. Although a useful framework in this regard, the SoC model itself does not specify the interventions to be used but indicates that different techniques may be effective at different stages.

As a result of the implementation of these techniques, it is intended that smokers move from one stage to the next, although it may not be sequential as the SoC proposes. The movement from one stage to the next, as well as the claim that individuals who experience relapses start all over again (pre/contemplation) has not consistently been found in practice. An individual who has experienced a relapse may directly start on action and shift between the stages. Furthermore, SoC-based interventions implemented in practice do not take into account the smokers who do not necessarily 'pass' through all these stages, especially as the group (pregnant smokers) may be likely to move from contemplation to action much faster.

Furthermore, the application of the model and its proposal of individuals having to undergo some process of pre-contemplation may not assist in the most effective methodology towards smoking cessation. Furthermore, individuals may have different

motivations for quitting smoking at the second attempt compared to a first attempt, which is the likelihood in the case of pregnant smokers. Relevant factors that influence smoking behaviour, such as the desire to quit and the motivation to quit (as a result of pregnancy) as well as other emotional factors and social determinants are not addressed in the SoC.

Despite it being a somewhat useful framework, i.e. providing an opportunity to categorise smokers for the purpose of relevant treatment, it has been subject to much criticism over past years. Smoking cessation may not always likely be a coherent and conscious, stable decision-making process (West, 2005). It is unclear how distinct strategies are completed before progressing from one stage to the next (Segan, Borland & Greenwood, 2004). West (2005: 1037) highlights that the SoC does not assist in anything besides the obvious, i.e. "people who want or plan to do something are obviously more likely to do it: and people who try to do". He highlights that the model draws away from the fundamental underpinnings of human motivation. Others have criticised the model for not accounting for the operant learning principles (punishment & reward) and the role of associative learning in developing habits (Baumester, Heatherton & Tice, 1994; Mook 1996; Day & Carelli, 2007). It has been criticised for the measurement problems associated with it (Littell & Girvin 2002; Herzog 2005) as well as the operationalisation of the SoC constructs (Etter & Sutton 2002).

As a result of the criticism, the SoC model has been altered and progressed further by Bowles (2006). Bowles' Adaptive Change model addresses a set of factors that define the change processes (Openness to Opportunity, Visualisation, Planning, Action &

Closure). The second set of factors (social support, inner driver & negative emotions) support the change process. On the other hand, West proposes a theory independent of any adaption: the Prime Theory of motivation (2006), which looks at motivation as a fundamental foundation, which operates through five levels, i.e. Prime (Plans, Responses, Impulses, Motives, and Evaluations), to behaviour from a psychological level of analysis, and views the theory as a 'pegboard' into which other theories can be integrated.

With a vast amount of developing theories, and continuous call for effective and sustainable methods for behaviour change, NHS smoking cessation services need a holistic framework, a coherent and systematic method of implementing interventions to effectively assist smokers through their quit attempt.

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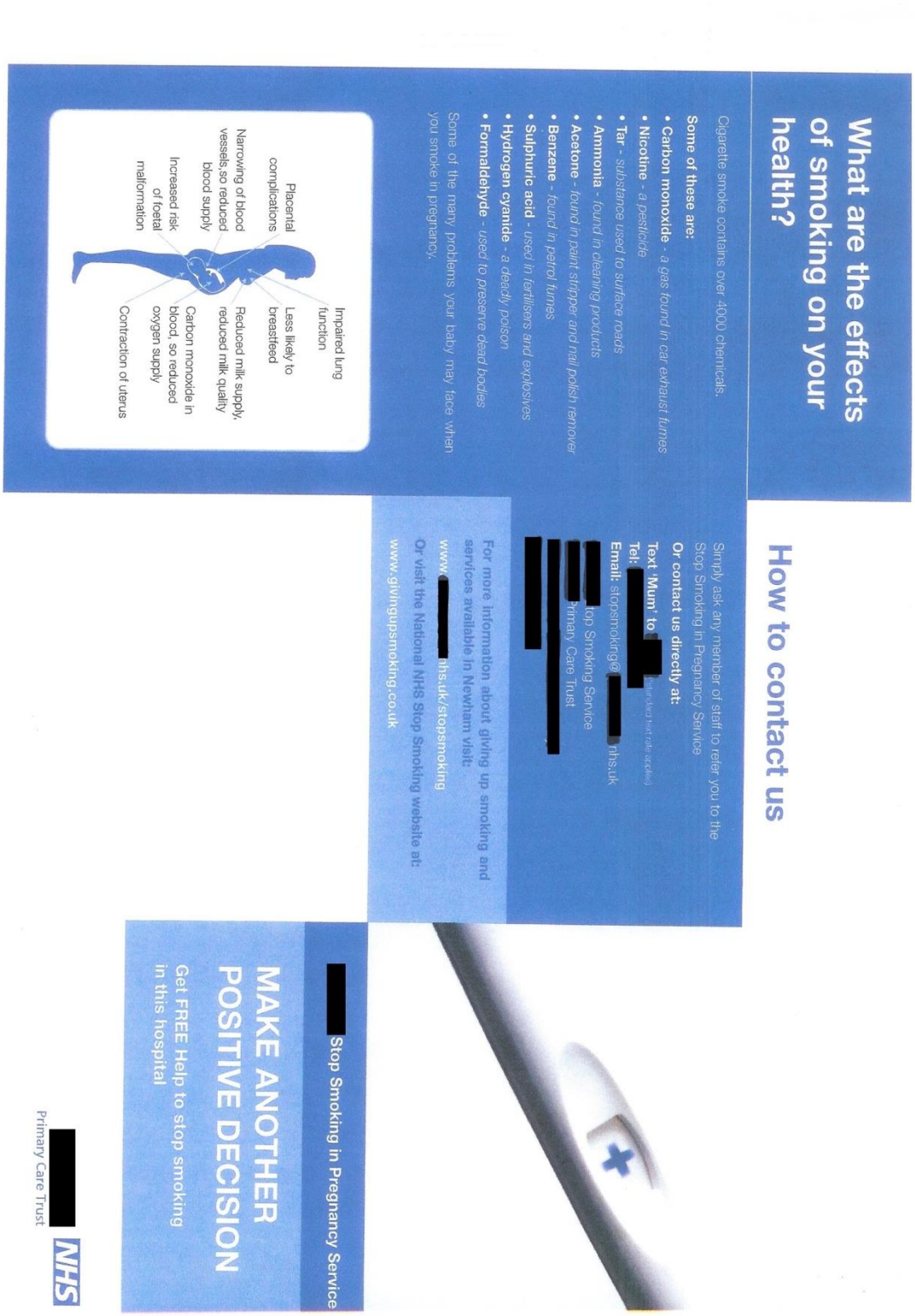
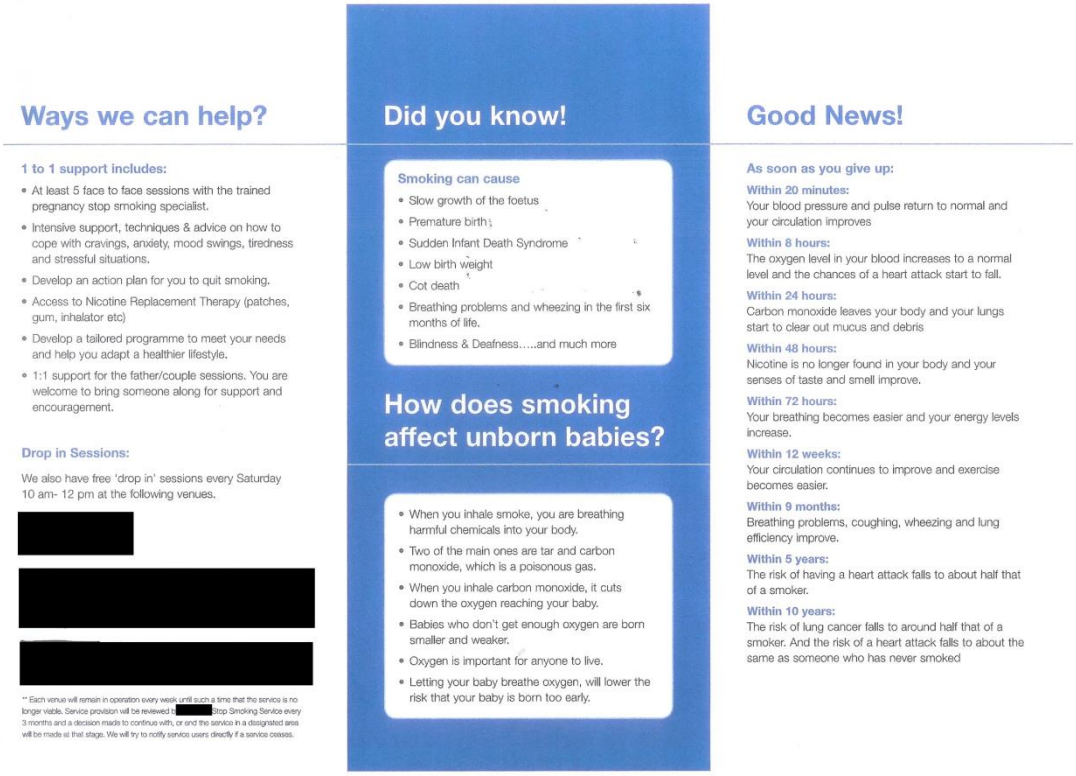
Appendices

Appendix I





Ways we can help?

1 to 1 support includes:

- At least 5 face to face sessions with the trained pregnancy stop smoking specialist.
- Intensive support, techniques & advice on how to cope with cravings, anxiety, mood swings, tiredness and stressful situations.
- Develop an action plan for you to quit smoking.
- Access to Nicotine Replacement Therapy (patches, gum, inhalator etc)
- Develop a tailored programme to meet your needs and help you adapt a healthier lifestyle.
- 1:1 support for the father/couple sessions. You are welcome to bring someone along for support and encouragement.

Drop in Sessions:

We also have free 'drop in' sessions every Saturday 10 am- 12 pm at the following venues.

[redacted]

[redacted]

[redacted]

** Each venue will remain in operation every week until such a time that the service is no longer viable. Service provision will be reviewed by [redacted] Stop Smoking Service every 3 months and a decision made to continue with, or end the service in a designated area will be made at that stage. We will try to notify service users directly if a service ceases.

Did you know!

Smoking can cause

- Slow growth of the foetus
- Premature birth
- Sudden Infant Death Syndrome
- Low birth weight
- Cot death
- Breathing problems and wheezing in the first six months of life.
- Blindness & Deafness.....and much more

How does smoking affect unborn babies?

- When you inhale smoke, you are breathing harmful chemicals into your body.
- Two of the main ones are tar and carbon monoxide, which is a poisonous gas.
- When you inhale carbon monoxide, it cuts down the oxygen reaching your baby.
- Babies who don't get enough oxygen are born smaller and weaker.
- Oxygen is important for anyone to live.
- Letting your baby breathe oxygen, will lower the risk that your baby is born too early.

Good News!

As soon as you give up:

Within 20 minutes:
Your blood pressure and pulse return to normal and your circulation improves

Within 8 hours:
The oxygen level in your blood increases to a normal level and the chances of a heart attack start to fall.

Within 24 hours:
Carbon monoxide leaves your body and your lungs start to clear out mucus and debris

Within 48 hours:
Nicotine is no longer found in your body and your senses of taste and smell improve.

Within 72 hours:
Your breathing becomes easier and your energy levels increase.

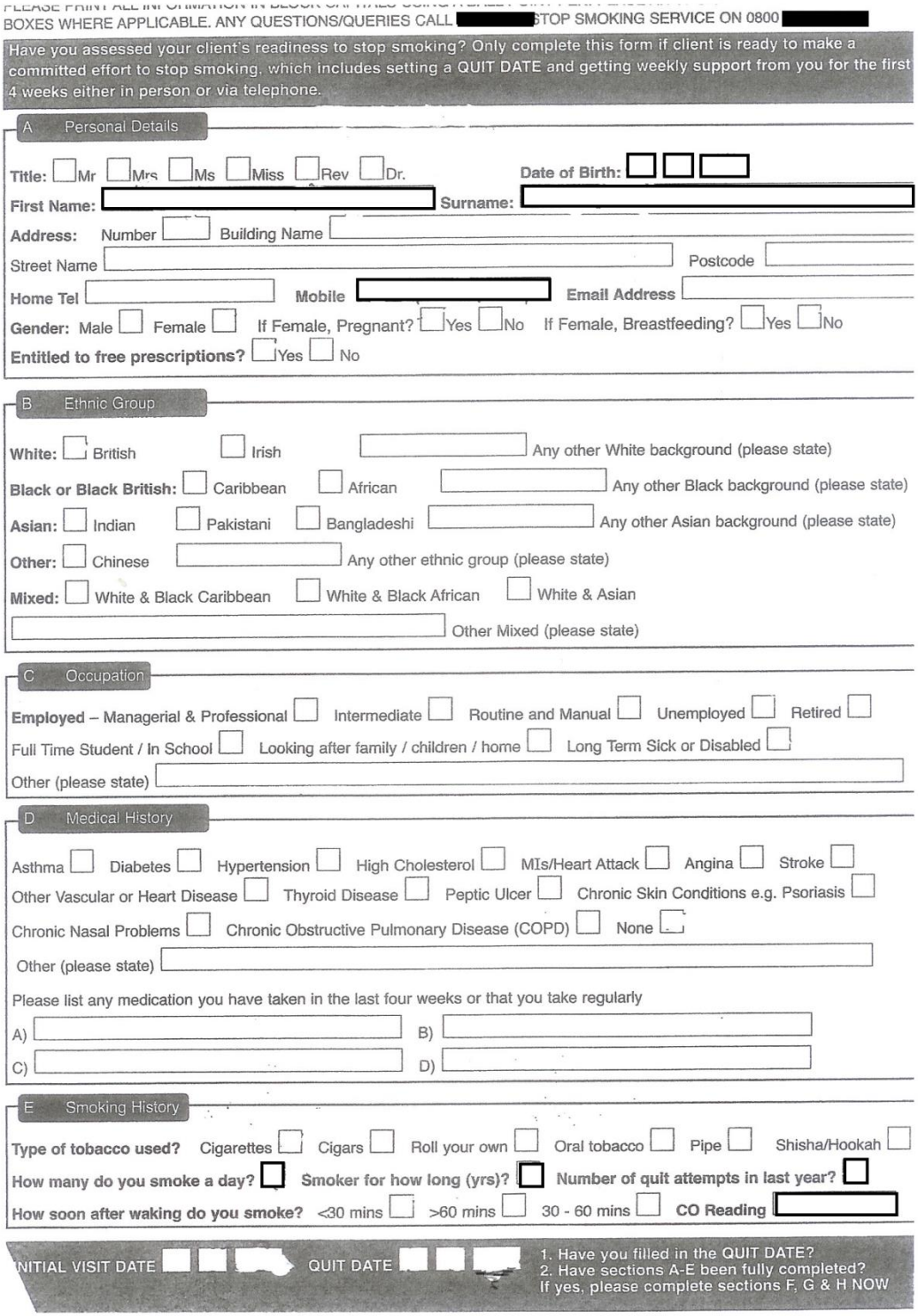
Within 12 weeks:
Your circulation continues to improve and exercise becomes easier.

Within 9 months:
Breathing problems, coughing, wheezing and lung efficiency improve.

Within 5 years:
The risk of having a heart attack falls to about half that of a smoker.

Within 10 years:
The risk of lung cancer falls to around half that of a smoker. And the risk of a heart attack falls to about the same as someone who has never smoked

Appendix II



PLEASE PRINT ALL INFORMATION IN BLOCK CAPITALS USING A BALLPOINT PEN. PLEASE TICK BOXES WHERE APPLICABLE. ANY QUESTIONS/QUERIES CALL [redacted] STOP SMOKING SERVICE ON 0800 [redacted]

Have you assessed your client's readiness to stop smoking? Only complete this form if client is ready to make a committed effort to stop smoking, which includes setting a QUIT DATE and getting weekly support from you for the first 4 weeks either in person or via telephone.

A Personal Details

Title: Mr Mrs Ms Miss Rev Dr. **Date of Birth:**

First Name: **Surname:**

Address: Number Building Name

Street Name Postcode

Home Tel **Mobile** **Email Address**

Gender: Male Female If Female, Pregnant? Yes No If Female, Breastfeeding? Yes No

Entitled to free prescriptions? Yes No

B Ethnic Group

White: British Irish Any other White background (please state)

Black or Black British: Caribbean African Any other Black background (please state)

Asian: Indian Pakistani Bangladeshi Any other Asian background (please state)

Other: Chinese Any other ethnic group (please state)

Mixed: White & Black Caribbean White & Black African White & Asian

Other Mixed (please state)

C Occupation

Employed – Managerial & Professional Intermediate Routine and Manual Unemployed Retired

Full Time Student / In School Looking after family / children / home Long Term Sick or Disabled

Other (please state)

D Medical History

Asthma Diabetes Hypertension High Cholesterol MIs/Heart Attack Angina Stroke

Other Vascular or Heart Disease Thyroid Disease Peptic Ulcer Chronic Skin Conditions e.g. Psoriasis

Chronic Nasal Problems Chronic Obstructive Pulmonary Disease (COPD) None

Other (please state)

Please list any medication you have taken in the last four weeks or that you take regularly

A) B)

C) D)

E Smoking History

Type of tobacco used? Cigarettes Cigars Roll your own Oral tobacco Pipe Shisha/Hookah

How many do you smoke a day? **Smoker for how long (yrs)?** **Number of quit attempts in last year?**

How soon after waking do you smoke? <30 mins >60 mins 30 - 60 mins **CO Reading**

INITIAL VISIT DATE QUIT DATE

1. Have you filled in the QUIT DATE?
2. Have sections A-E been fully completed?
If yes, please complete sections F, G & H NOW

urse ☐ Pharmacist ☐ Midwife ☐ Consultant ☐ Health Visitor ☐ Dentist/Dental Staff ☐

alth Professional ___ NHS Smoking Helpline ☐ NHS Direct ☐ Mosque ☐ Self referral ☐

(Please state) _____

elf referral how did you hear about the service?

Posters ☐ Leaflet / Flyer ☐ [redacted] Recorder ☐ [redacted] Magazine ☐ Family or Friends ☐

Large Outdoor Banner ___ Health Event / Stall ☐ T.V. Advert ☐

Other (please state _____

G GP Details

GP's Name _____ NHS OR NI Number _____

Address of GP (include Postcode - *can use stamp*)

H Consent

I _____ (please print your full name) consent to my personal details being shared with [redacted] PCT stop Smoking Service and I am willing to be contacted by an advisor from the organisation at 4 weeks, 6 months and 12 months after my quitting date. I understand that contact may be made in person, by telephone, by letter, by email or by text message and that the purpose of this follow up contact is to check on my progress and to offer additional support if appropriate.

The department of Health collects data on the number of people who access the service and quit or do not quit. This is sent in an anonymous format (the Department of Health WILL NOT know your identity).

☐ I have read and understood the above statement, or it has read to me.

Signed _____ **Date** _____

Please Note, your personal details and records made about you by the Stop Smoking Service are confidential and will be kept in accordance with the provisions of thew Data Protection Act 1998, the NHS Guidance on Records Management and [redacted] PCT's Record Management Policy.

DO NOT COMPLETE THE FOLLOWING SECTION UNTIL 4 WEEKS AFTER THE QUIT DATE

I Smoking Status at 4 Weeks (This should only be completed 4 weeks after the quit date)

Date of 4 week follow up (if applicable) ☐☐☐☐ (Do not need date if the person is lost to follow up)

Method of 4 week follow up Face to Face ☐ Telephone ☐ Not Seen (lost to follow up) ☐

Has client quit? Yes ☐ No ☐ Not known ☐

Was a CO reading taken? Yes ☐ No ☐ Not applicable ☐

What was the CO reading _____ ppm

Does the CO reading confirm quit? Yes ☐ No ☐ Not applicable ☐ (NB. CO must be below 10ppm to confirm)

What type of medication/treatment was used by the client? NRT ☐ Zyban ☐ Champix ☐ NRT & Zyban ☐ NRT & Champix ☐ None ☐

What type of NRT was used by the client? Patch ☐ Microtab ☐ Gum ☐ Inhalator ☐ Lozenge ☐ Nasal Spray ☐ N/A ☐

J Advisor Details

Advisor Name _____

Advisor Signature _____

Date ☐☐☐ **Advisor Number** _____

Did the client attend a group - either Yes ☐ No ☐ **standard or rolling?**

If yes, where was the group held _____

Did the client attend a drop in? Yes ☐ No ☐

If yes, where was the group held _____

Did the client attend a workplace support programme? Yes ☐ No ☐

If yes, which company/workplace? _____

Did this client attend a 1:1? Yes ☐ No ☐

Was this person a hostpital service client? Yes ☐ No ☐

Was this person a mosque service client? Yes ☐ No ☐

Appendix III

[redacted] NHS
Primary Care Trust

[redacted] PCT Stop Smoking Service
CONSENT FORM
(Pregnant Women)

I_____ (please print your full name) consent to my personal details being shared with [redacted] PCT Stop Smoking Service and I am willing to be contacted by an advisor from the organisation at 4 weeks, 6 months and 12 months after my quit date.

I understand that contact may be made in person, by telephone, by letter, by email or by text message and that the purpose of this follow up contact is to check on my progress and to offer additional support if appropriate.

Your advisor will explain the use of Nicotine Replacement Therapy (NRT) in pregnancy. Please tick below to say that you have understood the information that has been given to you:

☐ I have been advised of the risks and benefits of using NRT compared to smoking - NRT is not 100% safe in pregnancy, but compared to smoking it is many times safer.

☐ I have been advised not to exceed the recommended dose.

☐ I understand that I must refrain from smoking whilst taking NRT.

Signed:	
Date:	
Advisor Name & No:	
Advisor Signature:	

Please note, your personal details and records made about you by the Stop Smoking Service are confidential and will be kept in accordance with the provisions of the Data Protection Act 1998, the NHS Guidance on Records Management and the [redacted] PCT's Clinical Records Management Policy.

SECTION C

Professional Practice

Direct the Implementation of Interventions Competence

Unit 5.2

Training & Guiding Bilingual Health Trainers

Training & Guiding Bilingual Health Trainers

Background

The National Health Service (NHS) trust collaborated on a collective partnership between the Trust and a private organisation, to work towards tackling Cardiovascular Disease (CVD) in an East London Borough. The main objective of the organisations' collaboration was to reduce excess deaths and hospital admissions from coronary heart disease within this borough, particularly in those communities that have a high prevalence. Smoking prevalence in this borough is amongst the highest in the country, particularly in some communities, such as the Eastern European. Data illustrated that the smoking prevalence amongst Eastern European women is slowly rising, yet for men it is becoming stabilised (WHO, 2007).

Research indicates that smoking causes approximately 17% of deaths from heart disease. People who stop smoking account for almost half (48%) of the decline in CVD deaths (Scarborough et al., 2010). One of the key aims in the overall project framework was to reduce tobacco use amongst pregnant Eastern European women and their partners.

My role as a lead on this project involved recruiting/supervising/managing the staff, as well as directing the implementation of interventions. The overall aim of this strand was to develop resources for pregnant Eastern European women in this borough of London in their respective languages. In order to develop resources for this population we needed a thorough understanding of their lifestyle and their understanding of health, in addition to identifying and reducing cultural and language barriers. This was a good

opportunity to raise awareness of how to access services and to raise awareness of the services available in the NHS. My skills in project management improved greatly as I had the opportunity to design, implement and tailor the project autonomously and independently. The critical success factor was to develop effective educational material for pregnant Eastern European women about the impact of cigarette smoking on their unborn child and provide effective health advice on how to cut down and/or quit smoking. The extent of participation of clients, and their engagement in the intervention to change any health-risk activities and habits during the process would also indicate the success. The intervention would include sessions (two sessions-twice weekly back to back) on different health-related topics in addition to one-to-one client contact with a health advisor. The client would participate in sessions, and would also be encouraged to improve diet and engage in physical activity and any other health improvement behaviour, and the sessions would assist in this process of behaviour change. Behavioural support from the health advisor was a key component in the process of change. The concept of multiple behaviour change would be applied by using the health trainer guide (Michie et al., 2008). In order to support clients thoroughly and effectively, the staff were provided with training to become well informed and trained to support these clients in behaviour change. After the sessions were complete, the client would be asked to complete the post-intervention questionnaire. The spectrum of responses and their differences would form the foundation of the resource development, which was carried out in collaboration with the NHS, other external stakeholders and the design team. Part of this process would involve translation of the resources (e.g. literature) into other Eastern European languages and then distribution in order to

improve the access to NHS services alongside informing the community of the services offered by the NHS.

a) Establish needs and implement strategies for the procurement of intervention resources

Prior to recruiting staff for the implementation of interventions, a project plan, (available upon request) was developed for the behaviour change intervention. The aim was to support pregnant Eastern European women and their partners to stop smoking and work towards adopting a healthier lifestyle, i.e. improve diet and increase physical activity. One of the most challenging aspects of this intervention was the need for joint working relationships between different stakeholders to ensure the effectiveness of the intervention. Partnership work between the external stakeholder, NHS trust and local council was outlined in the project plan.

The project required graduates who understood the academic nature of the project as well as the practical implementation process. The previous job description (used by the Stop Smoking Service) was revised to recruit advisors and specialists within the field (job description and person specification available upon request). As the aim of the project was to develop culturally tailored material it was most important that staff were Polish speaking in order to enhance participation and improve access to the smoking services. This was not to exclude other interested candidates, yet for the purpose of the aims and objective, there was a need to recruit Polish-speaking candidates.

Despite having a detailed project plan, where each stage was thoroughly outlined, there was a need to integrate alternative solutions in cases where it was not possible to carry out the proposed activities.

Table 1: Alternative solutions if aim to recruit is not achieved

Point	**Alternative solution**
Polish-speaking graduates are not interested or unaware of the position and therefore will not apply for it	Use alternative methods for recruiting candidates, e.g. through the Polish community centre
Small number of clients recruited for the project	Recruit through General Practitioners
Community locations not willing to display recruitment material	Recruit through local libraries, GP practices, and walk in Centres

In order to ensure effective project management, a high level of efficiency was required. Tasks and activities such as regular correspondence with external stakeholders, to provide feedback to the evaluation team and development of sessions, required effective pre-planning and time management. The practicalities and pre-intervention checks involved the confirmation of rooms, delivery material, completed sessions, agenda and resources. Since the pre-intervention check required a multiple agency check, there was a need for a thorough process in order to any possible delays in the plan for implementation. The agreed timescale for the implementation was affected a few times due to this. However, a systematic ‘shared’ pre-intervention checklist was thus implemented as an alternative solution.

b) Assess the capabilities of the people required to conduct and monitor a planned intervention

Only a small number of interested candidates applied for the position through the NHS job site. The candidates' profiles did not match the person specification, and they were therefore not shortlisted. This required an alternative solution to recruitment. The post was re-advertised in the local Polish magazine, and a high number of applications were received. A need to recruit at least three candidates was identified through the project activities and timescale.

The human resources department assisted with contacting the candidates and inviting them for the interviews. The recruitment process (shortlisting, interviews, retrieving references, etc.) was supported by the Stop Smoking Programme Manager, as well as the Communities Stop Smoking advisor. Four candidates were appointed as Polish-speaking Stop Smoking sessional advisors. It was planned that they would be further attending training to enhance their skills as health trainers. This was considered important so they felt well equipped with skills and competencies required for the implementation of the intervention.

Staff induction training and workshops were arranged for the new employees to be introduced to the Public Health Department. Staff had no previous experience of working in smoking cessation; therefore, appropriate and tailored training was developed. Due to the nature of the intervention, it was agreed that it would be useful and beneficial if the new employees would acquire health trainer skills in addition to other relevant training (please see Appendix I for training courses). Health trainers work

with clients on a one-to-one basis, in order to assess the client's health style and support them in changing their behaviour to improve their health. Health trainers should be equipped with the skills and competence to help people change any health behaviour ranging from stopping smoking to becoming physically fit. This initiative was launched by the Department of Health (2004) and had already made a positive contribution in other Primary Care Trusts. Michie et al. (2008) developed a health trainer pack for health trainers, where the use of motivational interviewing techniques and active listening (Rollnick & Miller, 1995; Rollnick, Mason & Butler, 1999), goal setting (Carver & Schneider, 1998), action planning (Sniehotta, Scholz & Schwarzer, 2005), stages of change (Prochaska & DiClimente 1982; DiClimente & Prochaska, 1998) and the concept of self-efficacy (Bandura, 1998) are highlighted as necessary skills for trainers. This was assessed to be an ideal way to reach the aims and goals of this intervention. It was essential that staff were fully equipped to manage the situations they might encounter, and become effective health trainers as well as Stop Smoking advisors. This was an opportunity to deliver smoking cessation Level 2 training (similar to what I delivered through my teaching and training competence). In addition to attending the training, advisors were encouraged to observe my sessions with clients. Through the training, role-play activities also encouraged them to enhance their advisory skills.

On an ad-hoc basis, staff were required to provide feedback on the outcome of certain training (please see Appendix II for evaluation of training sheet). Each session was evaluated on different premises to assess whether the training met its aims and objectives. Furthermore, staff were encouraged to stay abreast of the behaviour-change

literature in relation to smoking in order to develop a strong foundation of the theoretical underpinnings of their work. Their skills were assessed during observations and through client sessions.

c) Advise and guide the activities of designated others

During the first meeting, we discussed areas where their input was required (such as recruitment of participants, display of recruitment material, etc). A thorough presentation of the aims and objectives of the intervention was also provided. Followed by this, the implementation process was discussed. This was also an opportunity to discuss their roles in the project as well as solicit their views. One of the exercises scheduled for this meeting was brainstorming of any ideas they felt could be implemented in the intervention which could benefit the target community (please see Appendix III for the template). I also took into account any comments they had about the current intervention plan. A log was kept to keep account of what was discussed and how it should be carried forward, as well as the progress of the intervention. The professional attitude of sessional staff during meetings meant they were well prepared and led to a good exchange of ideas. Providing them with the opportunity to participate in the development processes evidently enhanced ownership. Tasks were at times allocated to each staff member for improved developmental and 'use of skills' opportunity, for example, by using any learning (from the training they received) which could be implemented in the session they would deliver as part of the intervention.

Through extensive training and relevant materials like health trainer manuals the staff were well prepared to carry out tasks. A major part of these duties was to identify

locations for recruitment and to encourage site managers to agree to display recruitment material. Staff were required to do this in Polish if necessary as the sites visited were managed/owned by Polish community members and a vast number did not communicate in English.

Staff were required to design specific sessions of the interventions around health-improving behaviours (see Appendix IV for the list of areas). The interventions were developed to be implemented in manageable sessions. It was expected that staff would apply the skills and competencies received through training. When the sessional advisors faced challenges in relation to developing sessions for the project, they were provided regular feedback and supervision through the development.

The nature of monitoring required adherence to a strict approach. During the process of writing the rationale/plan for the project, development, recruitment, training, implementing and directing, I had to maintain and manage the key activities and keep account of key aspects. Recruitment (of pregnant Eastern European smokers) would be carried out through the identified locations in the community. The locations were identified by the sessional staff through online searches and fieldwork. The potential clients would fill out the postcard and return it via Freepost. The marketing material would be displayed at the identified locations in the community.

The plan to monitor the intervention was through the following:

- **Pre-Intervention questionnaire**: In order to gain a comprehensive understanding of the health behaviours of this population, a questionnaire was developed with feedback from the public health team. Recommended changes

were made to the questionnaire. The purpose was to gain baseline health information for this population (please see Appendix V).

- **Stop Smoking monitoring form**: The smoking cessation form is used to monitor cessation progress. It also includes Fagerstøm's Test for nicotine dependence which will assist in assessing the dependency of each client (please see monitoring form in Appendix II for the unit 'implementing behaviour change interventions').
- **Health Trainer Manual**: Staff were provided with the health trainer manual (Michie et al., 2008), which should assist them in supporting their clients during the intervention. It is used to monitor client's behaviour changes, which ranged from improving diet to regular exercise.
- **Informal qualitative data received at end of every session to monitor effect of session on behaviour change:** In order to assess the mode of delivery, anecdotal evidence will be collected before and after sessions. As this is a pilot study, the results of the evaluation will form further development of the sessions in the larger project. (please see Appendix VI for evaluation form).
- **Post Intervention Questionnaire**: The same questionnaire was used, but additional questions were asked. This was developed to assess the difference between the pre- and post-intervention. (please see Appendix VII for additional questions).
- **Evaluation**: The evaluation team consisted of two members who were appointed by the coordinators to evaluate each strand of the project. Their purpose was to evaluate and work closely with the project leads. Regular meetings were held with the evaluation team to discuss methods which should

be adopted for evaluation purposes and to explore those which would be appropriate, feasible and relevant at a practical level.

- **Development of resources and translation to relevant Eastern European languages:** Once the data has been analysed, resources and materials specifically for this community will be developed.

Complaints and appeals procedure for participants

To ensure that there was procedure for complaints and appeals, clients were given contact information for the NHS public health departments where representation of any complaints could be made.

d) Ensure technical support for a planned intervention

Staff had access to technical support in the development of the intervention. This included use of all IT facilities available to NHS staff, ranging from borrowing laptop/projector, using the NHS libraries and open access to all IT facilities and support from the IT helpdesk. Since advisors had access to confidential data, I was also required to provide ethical guidelines and supervision on managing confidential data, i.e. patient details, through secured IT systems.

e) Oversee and direct the conduct of a planned intervention

Due to contractual conflicts between external stakeholders, it was unclear when the interventions could be implemented. Due to this uncertainty, the interventions could not be implemented at this stage. This period was very difficult, as repeated extensions had to be made to the implementation, so that the project could be signed off. I raised my

concerns with the line manager responsible after repeated adjustments to the implementation. The final decision was escalated to the senior managers.

The preparations had been arranged, and details of the intervention had been planned out. Due to the project not being signed off, I took the opportunity to outline solutions to possible difficulties that may arise when the intervention would be implemented in the future.

Potential difficulties and solutions

The process of recruitment and the implementation of the intervention have the following potential difficulties. The planning and development of the intervention involved the pre-emption of possible problems; this required reflection and strategic thinking. Although the implementation stage was outside my involvement, I will reflect on the possibilities of potential difficulties and the solutions to those (please refer to the table below).

Table 2: Developing the intervention

Difficulties faced	Solutions
Financial resources required for use of 'smokers' clinic' site	An agreement was made to use the clinic room on a 'book in advance' basis to reduce unnecessary financial costs
Lack of administration re: the recruitment material, which had to be approved by external stakeholders prior to development and printing	Every step towards the development of the recruitment material had to be agreed by the external stakeholder. There were no formal agreements on the processes of

	such components. The coordinator was informed about the lack of effective administration and suggested methods of improvement.
Not being informed that the project had not been signed off – which caused severe delays in implementing the intervention	A detailed handover report was developed with clear instructions on the implementation of interventions
Lack of attendance at sessions	Ensure flexible access/recruit non-pregnant clients/invite previous clients who have experienced a relapse

The project was to be directed and overseen as planned and I was to be tasked with supervision of staff on the implementation of intervention throughout the process. I aimed to supervise the staff at the end of every session and oversee the intervention. By engaging them in campaigns while they were attending the smoking clinic for observations, their skills were assessed and supervision was provided in other contexts as well.

Conclusion

My experience in managing and directing this project has been a very beneficial learning experience on several different levels and has improved skills such as managing, supervising and guiding staff, and overseeing planning and developing interventions.. Having reviewed my logs for this competence, I can see the

improvement during this period. One of my concerns was the advisors' employment. The advisors were employed for the project, but as a result of the interventions not being implemented they were offered the opportunity to implement interventions in the smoking cessation team. It was a very displeasing experience not being able to carry out the entire planned project, but further reflection on this allowed the realisation that this is a reality of the nature of working in a health setting, and coping with such experiences was an integral part of the work. Even though I did not have the opportunity to direct the intervention, I had carried out the preparations necessary to carry it out. This also further illustrates and gives me an insight into how real issues in an applied health setting can have an effect on developing and implementing interventions within a real and applied health setting such as the NHS.

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Appendices

Appendix I

Training sessions arranged for Polish sessional advisors

- NHS induction
- Smoking cessation Level 1 advisor training
- Motivational Interviewing
- Smoking cessation Level 2 advisor training (provide resource pack)
    - Key focus on:
        - Smoking cessation in pregnancy
        - Effects on baby's health
        - Partner engagement
        - Baby carbon monoxide monitor
        - Therapeutic skills
        - Advisor skills needed
        - Use of NRT in pregnancy
        - Information
            - Smoking and health inequalities
            - NICE
            - Drugs details (pharmaceutical)

- Health trainer
    - Key focus on:
        - Multiple behaviour change
        - Stages of change for different behaviour
        - Theoretical aspects
        - Motivational interviewing in action

- Understand Health Improvement (UHI)
    - Key focus on:
        - Importance and benefits to public health of promoting health and wellbeing in the workplace and community setting
        - The factors that facilitate and create barriers to health improvement
        - The principles of behaviour change and maintenance and of how to apply them in helping people to make changes
        - The responsibilities associated with handling confidential and sensitive information
        - Methods that may be used to evaluate a programme to promote healthier lifestyles.

Appendix II

Date: Location:

1. What did you find most useful? Why?

.....

2. What did you find least useful? Why?

.....

3. Which section of the training would you like to gain further training on? Why?

.....

4. Suggestions for improvement?

.....

5. Would you recommend this training to advisors wishing to gain skills in health behaviour change?

.....

Appendix III

Brainstorm activity

- How do we get clients to take an active participatory approach to their health behaviour change?
- How do we reach out?
- What tools do we need?
- What skills do we need?
- Any cultural aspects we need to be aware of?
- What do you think will attract clients to join:
  - to stop smoking?
  - Improve diet
  - Increase physical activity?
- How do we engage their partners? Do we need to adopt a different approach?
- Where are the gaps?

Appendix IV

Topics for weekly health improving drop-in sessions with clients:

Topic	Location	Date(s)	Advisor
Stopping smoking			
Healthy eating			
Physical activity			
Weight management			
Screening			
Alcohol			
Accessing NHS services			
Mental health awareness			

Appendix V

[redacted] EE Questionnaire [redacted]

14th November 2008

Sonia Zafar and [redacted]

In the rationale document Action 1: "Assess baseline knowledge, attitude and understanding of health risks associated with smoking"

Questionnaire to be developed for target group to identify the answers to above. Also included diet, exercise and emotional wellbeing/good mental health.

Data protection
All information collected will be held and processed securely under the principles of the Data Protection Act 1998. The information you have provided will only be used for evaluation purposes, in connection with [redacted] Primary Care Trust's Stop Smoking Programme. If you do not wish your personal information to be held or used by the London Borough of [redacted] please contact (telephone no. [redacted].

Some questions are for women only, some men only, others are both. They are indicated by M and F.

Section 1 - Smoking habits

1. (M & F) Do you smoke? Yes / no <u>If no go to question 10</u>

2. (M & F) What type of tobacco do you use?
(Please circle all that apply)
*Cigarette, roll-up oral tobacco, cigar, pipe, shisha, other (state)*_____

3. (M & F) How many years have you smoked? _____ *years*

4. (M & F) How much do you smoke a day now? _____

5.1 (F) Are you pregnant?
Yes / no <u>If no go to question 6</u>

5.2 (F) How much did you smoke before you knew you were pregnant?____

6. (M & F) Do you smoke a UK brand of tobacco? (Select one)
Yes/ No
State typical brand .....

7. (M & F) Is your tobacco normally from UK (Select one)
Yes/No/ don't know

8. (M & F) How soon after waking up do you have a cigarette? (Select one)
Less than 30 mins *Between 30-60 mins* *More than 60 mins*

9. (M & F) Why do you smoke? (Please circle all that apply)

I like it / pleasure	*Boredom*	*Stress relief*
Weight control	*Peer pressure*	*Habit*
Addiction	*To concentrate*	*To relax*
For a break	*Social*	

Other (state).....

10.1 (M & F) Did either of your parents smoke? (Select one)
Yes/ No/ Don't know/ Not applicable
10.2 (M & F) If yes which parent? (Please circle all that apply)
Mother / father / both

11.1 (M & F) If your mother smoked, did she smoke while pregnant with you? (Select one) Yes/ No/ don't know/ *not applicable*
11.2 While pregnant with your sibling(s)? (Select one)
Yes/ No / don't know / not applicable

12. (M & F) Do you know if there is any smoking related disease in your family? (E.g. cancer, COPD, heart attack) (Select one)
Yes/ No/ don't know
If yes, please state which disease or illness?.....

13. (M & F) Does your current partner smoke?
Yes/ No/ Not applicable

14.1 (M & F) If you smoke, have you tried to stop smoking before? (Select one) *Yes / no* If no go to question 17

14.2 (M & F) If yes – when? (Select one)
Last month
2-6 months ago
7-12 months ago
More than a year ago

15 (M & F) How long did you stop for?
*Number of days / weeks / months / years*_____
(please circle and state as appropriate)

16 (M & F) What made you smoke again? (Circle all that apply)
Everyday stress
Peer pressure
Had too much to drink
You missed smoking
On a holiday
Major stressful event
You did not see any benefits in staying stopped
You thought you could smoke one/more cigarettes and not smoke again
*Other*_____

17 (M & F) Are you trying to stop smoking at the moment? (Select one)
Yes / No If no go to question 21
Thinking about stopping

3

18. (M & F) How supportive have your family or friends been of your quit attempt? (Select one)
Very supportive
Quite supportive
Neither, nor
Not very supportive
Not supportive at all

19. (M & F) How often do your family or friends offer support and encouragement for your quit attempt? (Select one)
Very often, 3 times a week or more
Often, once or twice a week
Sometimes, at least once a month
Rarely, less than once a month

20. (M & F) What kind of support do they offer you? (Select all that apply)
Verbal support
If they smoke, by not smoking in same room/in front of you
If they smoke, by not offering you cigarettes
*Other (please state)*_____

21. (M & F) How supportive do you think your family or friends **would be** if you decided to stop? (Select one)
Very supportive
Quite supportive
Neither, nor
Not very supportive
Not supportive at all

22. (M & F) Have you heard of Nicotine Replacement Therapy (NRT), patches, gum etc
Yes/ No

23. (M & F) Have you ever used NRT before?
Yes / No

24. (M & F) Which of the following effects do you associate with NRT? (Select all that apply)
Helps with withdrawal symptoms
There is a possible risk of harm to baby
Helps reduce cravings
Helps with controlling post cessation weight gain
Helps in stopping smoking
Increases appetite

Section 2 - Pregnancy and Health

1. (F) How do you intend to feed your baby in the first 6 months? (Select one)
Breastfeeding
Mixed feeding
Bottle feeding
Don't know/ undecided

2. (F) Why have you decided to feed your baby in this way? (Select one)
My doctor/midwife recommended it
My mother did it this way
I think it's the best way
For cosmetic reasons
For practical reasons
Don't know

3. (M & F) On a scale of 1-7, do you think cutting down on smoking when pregnant is...?

not important						*very important*
1	*2*	*3*	*4*	*5*	*6*	*7*

4. (F) (Optional) Have you ever had a miscarriage?
Yes/ No/ rather not say (please circle)

5. (F) Is this your first pregnancy? (Select one)
Yes / No / rather not say If yes go to question 7

6. (F) If no – did you smoke during your last pregnancy? (Select one)
Yes / No If no go to next question
If yes how much did you smoke? (Select one)
Less than normal
Same as normal
More than normal

7. (M & F) Which of the following risks do you associate with smoking during pregnancy and breastfeeding?
Increasing the risk of death of baby up to 1 year after birth
Miscarriage
Decreasing the quality of milk and ability to produce milk
Impaired child development
Ectopic pregnancy
Behavioural problems in later childhood
Other (please state)
None of these
Don't know

5

Second hand/ passive smoking? (Select one)
Increased risk of impaired growth and development in children
Increased risk of Conception problems (fertility/sperm production)
Increased risk of respiratory disease in children
Increased risk of developing asthma in children
Increased risk of hospitalisation in children
Other (please state)
None of these
Don't know

9. (F) If you drink alcohol, have you thought about giving up drinking alcohol during your pregnancy?
Yes I have thought about cutting down / stopping during pregnancy
Yes I have already tried to cut down/ stop drinking during pregnancy
No I have not thought about cutting down / stopping during pregnancy
Not applicable (i.e. don't drink)

10. (M & F) Which of the following risks do you associate with drinking alcohol during pregnancy and breastfeeding.
Foetal Alcohol Syndrome (FAS)
Increased risk of miscarriage
Increased risk of infection
Increased risk of learning difficulties
Increased risk of addiction problems in adulthood
Increased risk of slow development

Section 3 - Some questions about general health

1. (M & F) Compared to people of your own age, would you say that your health is...

Excellent	*Good*	*Fair*	*Poor*	*Very poor*	*Don't know*
☐	☐	☐	☐	☐	☐

2. (M & F) How healthy are you most of the time? (Select one)

Very healthy
Quite healthy
Not very healthy
Don't know

3. (M & F) Thinking back over the last 6 to 12 months, how many times did you do some physical activity (e.g. walking at a brisk pace, sports, physically active housework)?(Select one)

Every day
6 times a week
5 times a week
4 times a week
3 times a week
Twice a week
Once a week
Less than once a week
Never
Don't know

And what about in the past 7 days? (Select one)

Every day
6 times a week
5 times a week
4 times a week
3 times a week
Twice a week
Once a week
Less than once a week
Never
Don't know

4. (M & F) Do you think you eat healthily...? (Select one)

Always
Most of the time
Sometimes
Rarely
Never

5. (M & F) How many portions of fruit and vegetables do you usually eat each day?

(Select one)

None
1-2
3-5
6-7
Don't know

6. (M & F) How often do you eat fast food such as McDonalds, Burger King, Kentucky Fried Chicken, chips or other take away food like that? (Select one)

7

About once a week
Every now and then
Never or hardly ever

7. (M & F) How often do you eat crisps or sweets or chocolate or have fizzy drinks such as coke or lemonade? (Select one)
Every day or nearly every day
About once a week
Every now and then
Never or hardly ever

8. (M & F) How often do you drink alcohol? (Select one)
Every day
3-6 days a week
Once or twice a week
A few times a month
I don't drink alcohol at all

9. (F) Has your attitude changed towards your health since becoming pregnant?
Yes/No/Don't know
*In what way? (Free text)*_____

10. (M) Has your attitude changed towards your health since you have known you are going to be a parent?
Yes/No/Don't know
*In what way? (Free text)*_____

11. (F) Which of the following lifestyle changes have you made since becoming pregnant?

	Less of this	*More of this*	*No change*
Smoking			
Drinking alcohol			
Healthy eating			
Physical activity			
Taking vitamin supplements			
Other(state)			
None			

12. (M) Which of the following lifestyle changes have you made since knowing you are going to be a parent?

	Less of this	*More of this*	*No change*
Smoking			
Drinking alcohol			
Healthy eating			
Physical activity			
Taking vitamin supplements			
Other(state)			
None			

13. (M & F) Which of the following changes would you like to make to your health? (Please select all that apply)

Drink less alcohol
Do more physical activity
Reduce stress
Eat a healthier diet
Stop smoking
Other (state)
None of these

14. (M & F) How satisfied or dissatisfied you are with your life overall? (Circle one)

1 not satisfied at all; 7 completely satisfied

1 2 3 4 5 6 7

15. (M & F) How would you rate your overall mood or state of wellbeing? (Circle one)

1 very poor; 7 very good

1 2 3 4 5 6 7

16. (M & F) Are there any areas of your life that you would like to improve? (please select all that apply)

Social support
Family and friends
Housing/ Living conditions
Disposable income
Health
Employment
Other (state)

Section 4 - About You

1. (M & F) Are you Male or Female (please circle) Male / Female

2. (M & F) How old were you on your last birthday?_____

3. (M & F) What is your nationality? *(state)*.....

4. (M & F) Do you consider yourself to be a disabled person?
   Yes ❑
   No ❑

5. (M & F) How long have you lived in [redacted]? (Select one)
   Less than 1 year
   1 to 2 years (more than 1 but less than 3 years)
   3 to 5 years (more than 3 but less than 6 years)
   6 to 10 years (more than 6 but less than 11 years)
   11 to 20 years (more than 11 but less than 21 years)
   More than 21 years (21 years or more)
   Don't know

6. (M & F) Who else lives in your household? (tick all that apply)
   Partner *Yes* ❑ *No* ❑ *Not applicable* ❑
   Children under 16 *Yes* ❑ *No* ❑ *(enter number if yes)*
   _____
   Family members (over 16) *Yes* ❑ *No* ❑ *(enter number if yes)* _____
   Friends *Yes* ❑ *No* ❑ *(enter number if yes)*
   _____
   Other tenants? *Yes* ❑ *No* ❑ *(enter number if yes)*
   _____
   Other *Yes* ❑ *No* ❑ (state).....

7. (M & F) What is the tenure of your home? (Select one)
   Owner Occupier
   Housing Association
   Rent From Council
   Council Leaseholder
   In temporary accommodation provided by the council
   Rent Privately
   Other
   Refused to answer

8. (M&F)
To which one of these groups do you consider you belong?

	(1)
White British	1
White Irish	2
White East European	3
Other White background	4
Black Caribbean	5
Black African	6
Other Black background	7
Mixed White and Black Caribbean	8
Mixed White and Black African	9
Mixed White and Asian	0
Any other mixed background	1
Asian Indian	2
Asian Pakistani	3
Asian Bangladeshi	4
Any other Asian background	5
Chinese	6
Other ethnic group	
Refused	9

9. (M&F) This question will need verification re equivalent for poland
Which of the following qualifications do you have?
PLEASE TICK ALL THAT APPLY

No formal qualifications ❑

O levels/CSEs/GCSEs (any grades) ❑

GCSC grades A to C or 'O' Level pass or equivalent ❑

A levels or AS levels or equivalent ❑

SCE (Scottish Certificate of Education) higher or equivalent ❑

Degree level qualification or equivalent (include equivalent professional qualifications such as chartered accountant) ❑

Higher Degree (e.g. M.A, PhD, DPhil, PGCE, post graduate certificate, diplomas) ❑

NVQ or SVQ or GSVQ Level 1, Foundation GNVQ ❑

NVQ or SVQ or GSVQ Level 2, Intermediate GNVQ ❑

NVQ or SVQ or GSVQ Level 3, Advanced GNVQ ❑

NVQ or SVQ Levels 4-5, HNC HND ❑

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Professional qualification below degree level (for example teaching or nursing) ❑

Other *PLEASE TICK AND WRITE IN* ❑

_____

10. (M&F) Employment status. Which best describes your current working status? (Please circle one)

1. full-time paid work (30+ hours per week)
2. part-time paid work (8-29 hours per week)
3. part-time paid work (under 8 hours per week)
4. on a government supported training programme(e.g. Modern Apprenticeship/ National Traineeship/Training for Work/ Adult training)
5. in full time education at school, college or university
6. unemployed (seeking work)
7. not in paid employment (not seeking work)
8. retired

11. (M&F) What is your current legal marital status. (Please circle one)

1. Married/civil partnership
2. Cohabiting/ Living with partner
3. Separated
4. Divorced
5. Widowed
6. Or have never been married

Thank you for your participation.

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Appendix VI

Evaluation form

Topic.....

1. Did today's session meet your expectation?

   Yes No

2. Was the workshop clear and easy to understand?

   Yes No

3. Would you like more interactive activities?

   Yes No

4. Was it held at a convenient location?

   Yes No

5. Does the time and duration suit you?

   Yes No

6. Will you attend other sessions as well?

   Yes No

7. Any health areas you would like us to address in the future?

.....

.....

.....

8. Suggestions for improvements.

.....

.....

.....

Thank you for coming – keep up the positive change in health

Appendix VII

[redacted]EE Questionnaire

Data Protection.
All information collected will be held and processed securely under the principles of the Data Protection Act 1998. The information you have provided will only be used for evaluation purposes in connection with [redacted] Trust's Stop Smoking Programme. If you do not wish your personal information to be held or used by the London Borough of [redacted] please contact (telephone no. [redacted])

Section 1 – Smoking Habits

1. Have you stopped smoking? Yes / no (if no go to question 5)
2. Which treatment method did you use?
   (Please circle all that apply)
   NRT (Gum, Lozenge, patch, inhaler), Champix, Zyban, None – I went cold turkey.
3. What was your last CO reading?

   .....
4. If pregnant, what was your babys CO reading?

   .....
5. Are you pregnant Yes / No
6. If you still wish to quit, please contact the Pregnancy& Hospital Stop Smoking Specialist on [redacted] or leave your details with us.

Thank you for your participation.

SECTION D

Systematic Review Competence

Unit 2

Multiple behaviour change interventions in workplace health promotion

Multiple behaviour change interventions in workplace health promotion

Background & Introduction

Why Workplace Health Promotion

Protection of employee's health took its start in the middle of the 18th century, where morbidity and mortality from occupational exposures were exceptionally high compared to today's standard in most industrialised countries (WHO, 1996). For more than a hundred years, the primary focus was on passive protection from direct harm. This resulted in very effective initiatives resulting in the reduction of disabilities and premature deaths for millions of workers.

Apart from protecting employees from direct occupational harm, the need to address a wider holistic approach to health was established. Over time, there has been a clear shift from prevention of accident to proactive initiatives to promote health in a more holistic sense illustrated through certain statements and declarations (World Health Organization (WHO) Session on Occupational Health (WHO, 2002); Ottawa Charter for Health Promotion (WHO, 1986); Jakarta Declaration (WHO, 1997); Bangkok Charter for Health Promotion in a Globalised World (WHO, 2005); Luxemburg Declaration on Workplace Health Promotion in the European Union (ENWHP); Lisbon Statement on Workplace Health in Small/Medium Sized Enterprises (ENWHP); Barcelona Declaration on Developing Good Workplace Health Practice in Europe (ENWHP).

From a public health perspective, implementing health promotion in workplaces has a number of advantages (a) reaching a higher number of individuals who might otherwise

not take part in a health promotion program (b) conduct comprehensive, multi-level interventions that address both organisational and environmental factors as well as individual level factors, (c) enhance the possibility of sustainability regarding adoption of a healthy lifestyle as many employees spend a vast amount of their time in their workplace (Quintiliani, Sattelmair,& Sorensen, 2007; Goetzel et al, 2008; Rongen, Robroek, van Lenthe, 2013).

Evidence of intervention effectiveness, aims to assist in implementation of interventions which are considered best practice (Cochrane reviews). In order to effectively promote health in larger groups, and influence behaviour at a population/community level, we need to gain an in-depth understanding of the synergic effects between the external environment and people's inner determining aspects of behaviour and change. Furthermore, we need to understand how behaviour is determined by the different levels of influence, personal, social and overall context in a systematic ,clear and concise way (Michie, Rothman & Sheeran, 2007; Johnston & Dixon, 2008; Michie & Johnston, 2012). This would involve a holistic understanding of how, for example, interventions can support enhancing level of self-efficacy, how skills can be gained for maintenance of behaviour change and how can an environment play a role in supporting behaviour change, at the same time.

An overview of Theoretical Models

A number of factors play a role in influencing behaviour change. These factors have been outlined in a number of theoretical models; Knowledge-Attitude-Practice (KAP) (Bettinghaus, 1986), Trans-theoretical model (TTM) (Prochaska & DiClimente, 2005), Bandura's (1986) Social Cognitive Learning Theory (SCT), Becker's Health Belief

Model (HBM) (1974, 1984), Ajzen and Fishbein's Theory of Reasoned Action/Theory of Planned Behaviour (TPB) (1975, 1980) and Social Determination Theory (SDT) (Ryan & Deci, 2002)

It is beyond the scope of this review to look in depth at the various contributing factors within each theory and how it views behaviour change; however theories have been summarised to get an overall view. The above mentioned theories take different levels into account.

There are three different levels these theories can rest upon.

Theories which only take an individual's knowledge & attitude into account (KAP)

Theories which take mind, thoughts, mental processes, stages and the self into account (HBM, TTM, and TPB)

Theories which also take the external environmental and social factors into account (SCT, SDT)

From the above mentioned levels we can find three key concepts which cut across the theories:

Behaviour is determined by what people know and what they think.

What people know and think cannot alone lead to change, other factors such as motivation, skills, self-efficacy, self-perception, personal skills etc. play a key role in determining behaviour

The direct environment as well as the wider social context, has a key influence on behaviour.

As theories have evolved over time, multiple factors which have been found to influence behaviour have been integrated into theories. Behaviour and change is either conscious (where an individual makes an effort to make a change in their behaviour) or effortless (where an individual's behaviour is changed without any conscious effort to change). Effortful changes require an individual to make conscious decision, motivation and an action plan to implement their intentions to change, whereas effortless change is most often a result of the change in the external environment.

Many different approaches to behaviour change have been developed and tested, and can be classified as individual based and population based interventions. Within psychology, learning/cognitive theories, social cognition theory and stage models have often been applied to understand and change behaviour. Learning/cognitive theories constitute of theoretical constructs such as reinforcement, incentives and modelling, associative learning, exposure and cognitive behavioural therapy, which are often used in behaviour change interventions. Interventions based on social cognition theories aim to change behaviour by changing an individual's intention to change, which will then lead to behaviour change.

There are some key issues when using social cognition models for developing behaviour change interventions. Firstly, although the models (e.g. TPB) suggest which beliefs to change (attitude towards the behaviour, subjective norm, and behavioural control) they do not address how to change them. Secondly, they may miss important elements, which have an impact on behaviour, and are not related to beliefs e.g. the environment. Even though, a large number of behaviour change interventions have applied these models, there are not clear guidelines on intervention content, and the ways applied to change behaviour is not clear. Furthermore, it is not clear which

constructs are key in behaviour change, as some of the constructs from the above mentioned theories overlap (Norman & Conner, 1996).

Developing effective theory based interventions can therefore be relatively challenging, as development of intervention most often consists of a common sense and intuitive model and clear analysis of the theoretically predicted mechanism and associations may be lacking (Michie, Fixsen, Grimshaw et al, 2009). There has been a call to identify which aspects of interventions are effective in behaviour change and to improve reporting as well as content of interventions so that they are transparent and replicable (Abraham & Michie, 2008; Michie et al, 2009; West et al, 2010; Michie, Ashford & Sniehotta et al, 2011). One of the recent approaches to address this consists of (a) behaviour change taxonomy (BCTs) to code and label the different strategies applied (b) creating a match between these BCTs and target behaviour (e.g. particular techniques for a particular behaviour for a particular population) and carrying out an assessment of which strategies are most effective in change for a certain behaviour (Abraham & Michie, 2008; Michie, Johnston, Francis et al, 2008; Michie, Ashford & Sniehotta, 2011; Michie & Johnston, 2012).

Michie, Stralen & West (2011) further created the Behaviour Change Wheel (BCW), which consists of three levels: (1) essential conditions (COM-B), (2) intervention functions (each include one or more behaviour change technique) and finally (3) categories of policy. Three conditions were identified as essential for behaviour change to occur, opportunity, motivation and capability. Opportunity is defined as factors which are external to the individual that can initiate or prompt behaviour change. These are further categorised into social and physical. Motivation is defined as ‘brain

processes that energise and direct behaviour, which are beyond conscious decision making procedures (emotional responding and habitual processes). Motivation is further categorised as automatic and reflective. This is in line with West's Prime Theory of Motivation (West, 2006) and the reflective impulse model (Strack & Deutsch, 2004). Lastly, capability is defined as the psychological and physical ability to engage in the behaviour, further categorised into physical and psychological. These components influence each other, for example, opportunity can influence motivation as well as capability, and motivation can influence capability. These three components should, in essence, bring together the core reason of rationale behind behaviour. These conditions can bring forth change with a selection of relevant intervention functions. There are a total of nine intervention functions (education, persuasion, incentivisation, coercion, training, enablement, modelling, environmental structuring and restrictions) in the BCW. The authors suggest that these are a unified version of the vast amount of behaviour change strategies used in interventions. Finally, the behaviour change wheel suggests that policy changes can enable interventions to take place. The policy categories consist of, environmental/social planning, communications/marketing, legislation, service provision, regulation, fiscal measures and guidelines. The BCW should be understood as such that the policy enables the interventions to occur, which lead to change in the essential conditions, which then bring about behaviour change. The model fits well with the Theoretical Domains Framework (TDF) for behaviour change (French, Green, O'Connor et al, 2012; Cane, O'Connor & Michie, 2012) in that the TDF has been mapped onto to the COM-B model components (capability, motivation, opportunity) (Michie et al, 2011). The application of the COM-B may assist in identifying TDF domains that are more likely to be important in changing behaviour.

Through understanding a particular behaviour, intervention developers can select which TDF domains they investigate to inform the interventions. For example, the ‘capability’ COM- B component distinguishes between psychological and physical capability. The TDF domains which address ‘psychological capability’ are knowledge, skills, memory/attention and decision making process as well as behavioural regulation. The TDF domain which addresses ‘physical capability’ is skills. Similarly, the ‘opportunity’ COM-B component is divided into social and physical. The TDF domains mapped onto social opportunity is social influence, and environmental context and resources with respect to physical opportunity. The motivation, similar to others is also divided into components; reflective and automatic. The TDF domains mapped onto reflective motivation are social/professional role and identity, beliefs about capabilities, optimism, beliefs about consequences, intentions and goals. For automatic motivation, the TDF domains are social/professional role & identity, optimism, reinforcement and emotion.

The literature on workplace health promotion argues that comprehensive workplace health promotion consists of addressing several layers of the factors influencing the individual at the workplace. This consists of multiple intervention strategies, aiming to improve employee health. Comprehensive workplace health promotion programmes consist of ‘multi components’ with multiple strategies to target behaviour change, and are an integral part of workplace health promotion programmes. The role of these strategies as well as the selection of the components for behaviour change varies greatly and it is not aimed to be discussed here. However, a reason for this variation may be that different behaviours will require different strategies, different methods of intervening. For example, the same strategies targeting smoking cessation might not be

suitable to address weight loss. This requires an evaluation of the nature of the behaviour, and the context in which the behaviour occurs.

Health promotion programmes usually consist of implementation of educational material, sessions, mass media interventions such as posters, leaflets and videos. It is thoroughly cited that providing information/mass media campaigns are less likely to result in the most optimal behaviour change and that multifaceted approaches are needed (Albarracin, Cohen & Kumkale, 2003; Albaraccin et al, 2005; Albarracin, Leeper & Earl, et al, 2008). Despite this, many programmes have an underlying belief that implementing for example scare campaigns will increase perceived severity of risk, which in turn will lead to direct behaviour change, which is clearly an overestimation of the effectiveness of campaigns.

Other programmes also consist of behavioural support, interactive sessions or peer-education/lay health advice. These interventions not only provide information but there is an active process engaged in developing skills (to suit the group) which in turn, is predicted, at least theoretically, to have a higher likelihood of bringing change. There is evidence that increasing physical activity can facilitate change in diet and smoking behaviour (Booth et al, 2009; Manson et al, 1995; Hierich et al, 1993). However, there is lack of clarification in determining which interventions would be effective for a particular behaviour. Developing effective interventions which address the complexity of behaviour change is overlooked in many health promotion programmes (Gryer & Bryant, 2005).

Sustainability

A large number of workplace health promotion programmes fail to address the sustainability of behaviour change, resulting in insufficient evidence on long term effects of these programmes. Even though individuals may engage in initial changes, the sustainability of the change is lacking, where individuals revert back to old behaviours and habits. In order to support individuals in sustainable behavioural change, research needs to direct its focus towards addressing the issues in relation to behaviour change in the long term. Furthermore comprehensive workplace health promotion needs to take into account a number of factors; the nature of the behaviour, the context and the workforce.

Rationale and Objectives

It is unclear how well workplace health promotion interventions, over the past thirty years, have adopted effective strategies. Or how well workplace health promotion practice have been able to target several areas of influence and additionally implemented rigorous behaviour change interventions in health promotion programmes to support health related behaviour change.

Review question

Do workplace health promotion interventions support sustainable multiple behaviour changes?

Furthermore, this review will focus on:

To investigate whether or not workplace health promotion interventions (over the past thirty years), have become more multicomponent by implementing multiple strategies to support behaviour change.

How intervention strategies have been used in workplace health promotion programmes to support sustainable behaviour change.

Method

Study Criteria

Table. 1: Inclusion criteria used for selection:

Selection Criteria	Inclusion criteria
Size	100+ participants
Type	Workplace health promotion interventions
Design	Randomised Control Trials
Interventions	Interventions implemented referred to as Workplace Health Promotion Multiple behaviour change interventions. Health behaviour interventions of various combinations. *E.g.* smoking cessation /healthy eating/physical activity, alcohol, screening, etc. Additional components e.g. alcohol abuse, stress management and any other behavioural intervention combined with psychological intervention will also be included
Outcomes	Reported behaviour change (self-report and/or physiological measures)
Duration	Interventions with minimum intervention period of 6 months

Setting	Any type of workplace
Time frame	Articles published between Jan 1980- 2010
Language	English & Danish
Publication status	All relevant peer-reviewed articles

Searching the literature

A systematic approach based on the principles from NICE (Swan et al, 2010) was adopted. Scientific reviews on workplace health promotion were screened for identifiable cases. A list of relevant electronic databases was identified through manual search from different libraries, and with the support of scientific librarians. Scoping the databases for relevant cases, the following search strategy was applied:

The following search terms were used: ***work**** *(if not applicable then:* ***worksite*** *or* ***workplace****) AND* ***"health promotion"*** *AND* ***review*** *in title, keywords and abstract + published between 1980-2010.*

- In the following databases:

HSELINE, CISDOC, NIOSHTIC, Cochrane Occupational health field, PsycInfo, Scopus, ISI/Web of Science, Pubmed, Danish National Research database, ERIC, International Bibliography of Social Science, Business Source Complete, Biosis, Current Contents, Embase, Medline, Periodical, Emcare, ABI/Inform, TGG Health & Wellness

It was decided to use ‘review’ as one of the search terms as we wanted to identify large-scale cases within the time constraints. The searches traced 1031 review articles. Titles, abstracts and eventually text were evaluated and compared to the inclusion criteria outlined below. 53 review articles (appendix I) were regarded as potentially relevant to identify cases. These articles were screened and identified 185 potential cases. A case is defined as ‘an explicitly clearly defined institution, organisation or research group, which has implemented a multiple component workplace health promotion programme, which can therefore result in a number of studies as part of a case’.

A total of 158 articles were identified as not relevant and were therefore excluded, leaving a total of 13 cases based on 27 articles (appendix II) which were reviewed. Please see figure.1 for flow diagram of search strategy.

Data extraction

Relevant data was extracted from all studies. A data extraction form was used to gather information about the content, intervention characteristics and outcomes. Information on any theoretical framework which, was used in the cases, was also collected. Baseline and follow-up measures which, were considered relevant, were also extracted. Any factors, which might have played a role in the outcome results, were noted as well to provide an overall summary of the cases (Table 2 summary in appendix III).

Methodological Quality Assessment

Studies were independently assessed for methodological quality. This tool consists of six criteria: selection bias, allocation bias, control of confounders, blinding, data collection methods, and withdrawals and drop outs (Thomas, Ciliska, Dobbins, &

Micucci, 2004) (appendix IV). All studies were assessed using this quality assessment tool and the methodological quality of this is presented in Table 3.

Results

Cases are referred to as their project name. In cases where the project name is unclear the author(s) name(s) has been used.

Multiple Behaviour change

A total of thirteen cases were reviewed. Out of the thirteen cases (based on 27 articles) reviewed-Two cases looked at interventions where they combined diet and smoking (TAKEHEART and WellWorks II). Nine cases looked at interventions where they combined diet, smoking and physical activity (Gomel et al 1993, Healthy Worker, Health works for Women, Working Well, WellWorks, Working Healthy project, PERS, Bank of America, Prochaska et al 2008, Two cases combined Physical activity and diet (Gemson et al 1995, Muto 2001).

Methodological Quality Assessment

Methodological issues were identified in all cases. Selection bias was assessed moderate in five cases (TAKEHEART, Working Well Trial, Working healthy project, Prochaska et al 2008, and PERS). Only one case (Gomel et al., 1993) was rated strong on the selection bias criterion.

All thirteen cases were rated strong on the study design and confounder criterion. All were assessed weak on blinding.

Data collection method was assessed to be moderate in six cases (Wellworks, Health Works for Women, Working Well Trial, Working Healthy Project, healthy Worker Project and Gemson et al 1995). Four cases were rated weak for data collection (WellWorks II, Prochaska et al. 2008, Bank of America and PERS). Only three cases were rated strong on the data collection criterion (TAKE HEART, Gomel et al., 1993 and Muto 2001). The studies used a combination of biological measures as well as self-report measures for data collection.

The rating for the last criterion, withdrawal and drop out is dependent on the unit of analysis. Eight cases were rated as strong on this criterion (TAKE HEART, WellWorks I, & II, Working Well Trial, Working Healthy Project, Gomel et al., 1993, PERS, Healthy Worker Project). Five cases were rated as moderate on this criterion (Health Works for Women, Prochaska et al 2008, Bank of America, Gemson et al 1995, and Muto 2001). All studies reported number of participants (workplace or individuals) at baseline except one (Working Healthy Project). Please see table 3 for further details.

Case summary outline

The thirteen cases varied in type of workplace and population. The health promotion programmes for each case was carried out in either 1 (Prochaska et al 2008, Bank of America., Gemson et al 1995., Muto 2001) 15 (Well-works II), 24 (Well Works), 27 (Take Heart) 28 (Gomel et al., 1993), 32 (Healthy Worker), 9 (HealthWorks for Women), 26 (Working Healthy Project) or 114 work places (Working Well). One study did not report clearly on the number of workplaces (PERS).

Studies included female, blue-collar workers only (Healthy Works), diverse workplace populations (Take Heart), male/female white-collar workers (Healthy Worker, Gemson et al 1995, bank of America), male blue-collar workers (WellWorks-2, Working Well, WellWorks, Working Healthy Project, Muto 2001) and ambulance officers (Gomel et al.,1993), university employees (Prochaska et al 2008), public service employees (PERS).

Theoretical frameworks used

Only ten cases clearly reported use of a theoretical framework in their health promotion programme (WellWorks I & II, TAKE HEART, Working Well, HealthWorks for Women, Working Healthy Project, Gomel et al 1993, Prochaska et al 2008). There were overlaps in models, but the most frequently cited theoretical models were the Transtheoretical model (TAKE HEART, HealthWorks for Women, Gomel et al 1993, Prochaska et al 2008) and social learning theory/social cognitive theory (WellWorks I & II, Working Well, Working Healthy Project, HealthWorks for Women). Other frameworks used were principles of employee participation (Working Well, WellWorks I & II, Working Healthy Project). At an organisational level, diffusion of innovation, mass communication, social marketing, (WellWorks I & II, Working Well, Working Healthy Project, HealthWorks for Women) were used. One case was based on the social ecological model (WellWorks I & II).

Intervention components

A total of 12 components were identified in the thirteen WHP cases. These have been defined as follows:

Written Information: Participants are provided with educational information which is in written form (this can be in different forms e.g. as part of a campaign or mail/email based)

Verbal Information: Participants are provided education information verbal through campaigns or other means.

Assessment & feedback: Participants receive personalised feedback based on their results and assessment of health. Their health assessment is briefly discussed.

One–one support: Participants received one–one counselling and/or support for behaviour change.

Group support: Participants received support in groups for behaviour change.

Engaging (social): Behaviour change encouraged through social networks or alike. Key participatory approach was adopted.

Tailored: Interventions were tailored to suit the target population based on needs assessment.

Employee advisory: An employee advisory board was formed and implemented, where employee participants were active in the design, implementation and follow-up.

Lay/peer advice: Participants received continuous support through peers and/or lay health advisors

Incentives: Participants received incentives (financial or other) to maintain motivation and encouragement.

Environmental change: Environmental interventions were implemented

Policy: Organisational policy was developed based on workplace health promotion.

All thirteen cases varied in their workplace health promotion components ranging from consisting of all twelve components (WorkingWell Trial) to having two components (PERS, Gemson et al 1995). Other studies had eleven components (Working Healthy Project), eight components (TAKE HEART), seven components (WellWorks, Wellworks II and Health Works for Women), six components (Gomel et al 1993, Prochaska et al 2008), four components (Healthy Worker Project, Muto 2001), and three components (Bank of America). Details can be found in Figure 2.

Behavioural outcomes

Due to the severe heterogeneity of data the results across studies cannot be compared and neither can trends in effectiveness be evaluated over the three decades. Because of this it was not possible to analyse the results statistically and therefore this review will focus on specific outcomes in relation to the nature of intervention as well as the theoretical basis for intervention.

Data in the cases have used different reporting methods. For example for weight loss, studies have reported incompatible measures such as:

% of participants who were above ideal weight at baseline and % of participants above ideal weight after intervention

% at risk BMI (kg/m2) >= 30

% mean change in weight over time

Mean change in risk factor from baseline

A similar inconsistency for reporting measures for other behaviours has also been identified. Due to this, a meta-analysis was not carried out.

Significant outcomes in relation to smoking, diet and physical activity

Cases that delivered intervention for smoking reported outcomes on smoking cessation (ten cases) and/or smoking quit attempts (three cases)

Eleven out thirteen cases looked at smoking, of these only one case reported a statistically significant outcome. Cases that delivered interventions for physical activity and diet reported outcomes on blood pressure (systolic and diastolic), cholesterol, dietary fats, saturated fats, triglycerides, fruit, veg, fibre, fat, sodium, physical activity and aerobic capacity. Seven out of thirteen studies looked at physical activity, of these five cases reported statistically significant outcome for physical activity. One out of four cases reported a significant outcome for BMI (Muto 2001).

Two out of three cases reported a significant outcome for weight (Healthy Worker Project and Muto 2001). No case reported a significant outcome for body fat. One out of three cases reported a significant outcome for both systolic and diastolic blood pressure (Muto 2001). Two out of five cases reported a significant outcome for cholesterol (Gomel et al 1993 & Muto 2001). Two out of two cases reported a significant outcome for dietary fats (PERS and Bank of America). One out of one case reported a significant outcome for saturated fats (PERS). One out of one case reported a significant outcome for triglycerides (Muto 2001). Four out of six cases reported a significant outcome for fruit and vegetable intake (HealthWorks for Women, Working Well, WellWorks, Working Healthy project). One out two cases reported a significant outcome for fibre (Working Healthy project).

Two out of five cases reported a significant outcome for fat (Working Well, Wellworks). Only one (out of one) case reported a significant outcome for sodium (Bank of America).

Details can be seen in table 4.

Some cases implemented similar components in their programmes to influence health behaviour. These primarily consisted of health risk appraisals, short counselling/brief interventions with a nurse/health educator and occasional educational sessions in groups.

Discussion

Raising awareness through providing information & educational interventions

One of the most widely used elements in health promotion programmes is information dispersal through use of various means for example, information dispersal through posters, leaflets, hand-outs, mass media marketing and games etc. This is most often incorporated into more complex interventions. Interventions use information and education to improve knowledge and change beliefs and attitudes. In addition to this, the cases reviewed implemented a Health Risk Appraisal (HRA)/Voluntary Health Assessment (VHA). Employees taking a HRA are most often given a report outlining their health risks, and are being provided with supplementary literature. Psychological models address that risk perception is highly relevant to understand rationale why people engage in behaviour or why they choose not to. According to social cognition models, if one believes to be at risk of an illness e.g. lung cancer, the theory would

predict that they are less likely to engage in behaviour (such as smoking) which increases their risk of illness.

Generic information provision usually provides answers to common questions which fail to address the personal barriers and relevance related to one's own state of health. Information or education provided on the basis of personalised HRA/VHA are used as a strategy to motivate behaviour change (Becker & Janz, 1987; Schoenbach, Wagner & Berry, 1987; Goetzel, Sepulveda & Knight, 1994; Collins, 2011), enhance knowledge about risk factors, and provide a framework for education and brief-intervention counselling (Becker & Janz, 1987; Schoenbach, Wagner & Berry 1987; Spasoff & McDowell, 1987). HRA/VHA appear therefore to be a comparatively effective way to address change the initial stages of change (to change beliefs, attitudes etc), as the information presented is personally relevant (Marteau, French & Griffin et al, 2010; Collins, Wright & Marteau, 2011), although research also suggests that providing personalised risk information may not be as effective as assumed, and this type of intervention component does not generate changes in perceived control (Collins et al, 2011).

Seeing provision of information in the light of the BCW, we can map the three components of information provision (written, verbal and assessment & feedback) to the 'education' intervention function of the BCW. HRA/VHA (assessment & feedback) can particularly be seen in the light of 'persuasion' intervention function. It can also be seen in light of the TDF domain of 'knowledge, skills, memory, attention & decision processes'. HRA/VHA's may address TDF domains such as beliefs about the capabilities, beliefs of consequences, intentions and reinforcement. It is unclear whether

they address domains such as goals, even though we can assume that this may be a part of the intervention.

Additional behaviour change strategies

We know that information alone cannot bring change, and needs to be accompanied with active behavioural strategies (Albaraccin et al, 2005). The active behavioural strategies identified in the review consisted of intervention components where behavioural support was an ingredient (one-one support, group support, social aspects, employee advisory board, lay peer advice and incentives).

Research documents the importance of behavioural counselling through personal contact and follow-up work, which can successfully lead to behaviour change (Erfurt, Foote & Heirich 1991; Gregg et al 1990; Rose et al, 1980; Abrams & Follick, 1983; Janis & Mann, 1977; Meichenbaum, 1977; Shelton & Rogers, 1981; Rippetoe & Rogers, 1987). Behavioural counselling and follow-up work can help engage employees and enhance their self-efficacy, which is core to many changes in behaviour. However, long term maintenance remains difficult to sustain, even with these strategies.

It is difficult to map components such as behavioural support (one to one/group), or interventions which take into account the social networks to the BCW. We can assume that capability and motivation would be most commonly addressed in one-one/group interaction; it is difficult to draw firm conclusions to what extent this is addressed. In light of the BCW, such interventions functions were education, persuasion, and training. Mapping TDF domains such as knowledge, skills, and social influences is not possible.

Supplementary to behavioural support, group based interaction; skills based session, mutual support from peers can further enhance active engagement in the change process. Most programmes offered this, even though there was variation from case to case.

Lay health advisors are effective in promoting change at the individual's level, which can result into an easier and more convenient transition to individual's real life. Interventions using lay-peer advice can be seen in line with modelling, and possibly training intervention function of the BCW, where lay peers can impart skills.

Some studies used incentives as an intervention component (see figure 2), and this can be mapped directly on to the behaviour change wheels 'incentivisation' intervention function.

Individual counselling programmes with long term support, within a context of comprehensive health promotion and focus on the psychosocial aspects of the environment have been suggested for more effective workplace health promotion (Muto, 2001). However a clear, systematic, replicable method for the process of implementation, and for which behaviour the intervention should be focused on is much needed. The techniques required for this are unclear.

Environmental factors

Comprehensive workplace health promotion programmes implement interventions at several layers to target the various influence on behaviour (see fig.2). Research suggests that making simultaneous changes in the environment and the individual's behaviour

will produce synergic effects on behaviour change (Abrams, Elder & Carleton, 1986; Thompson & Kinne, 1990; Sorensen, Hunt & Morris, 1990; Michie et al, 2009; 2010; 2011). Environmental changes are implemented in order to change attitude, change norm, and motivate adoption of healthy lifestyle behaviours. The multi-component programmes implemented strategies to influence the environment. In addition to the above mentioned intervention components, programmes such as the WWT (Well Works Study and the Working Healthy Project were sub- studies of the larger Working Well Trial), Take Heart, also modified the environment and implemented organisational policies to support employees in behaviour change. This can be seen in light of the 'environmental restructuring' intervention function of the BCW.

Engaging employees in implementation of intervention can help tailor the programme even further, and employees will be more likely to participate in health promotion when they are engaged in implementation (Israel, 1985; Rothman, 1970; Carlaw et al, 1984; Orlandi, 1987) and can also effectively broaden the focus. Employee Steering Committee (ESC) (Take Heart) or Employee Advisory Boards (EAB) (WWT) help tailor the interventions to the context and culture of the workplace. EAB's and ESCs can be seen in light of the 'communication/marketing' and 'guidelines' policy categories of the BCW. Their role as a medium to create documents and implement contextually appropriate interventions can have an improved benefit to enhance employee participation and increase potential for behaviour change. This engagement implementation can play a crucial role in communication from management to employee workforce and vice versa.

The interventions in WWT were based on key concepts of different theories in behaviour change targeting three levels: 1) individual 2) organizational and 3) community activation and diffusion theories highlighted above. Core concepts focused on skill building, self-assessment with feedback, provision of step-by-step instructions for skill building instructions on goal setting, opportunities for personal or written feedback and follow-up sessions. Furthermore, the WWT was designed to reach people at all stages (Glanz & Eriksen, 1993; Abrams et al, 1994), as health promotion interventions commonly appeal to people who are in the preparation stage and have a higher level of readiness to change (Prochaska, DiClimente& Norcross, 1992; Prochaska, DiClimente & Evers 2002). The intervention was designed and implemented in a stepwise manner by building awareness, followed by skill training, and finally focusing on maintenance (Biener, Glanz & McLerran, 1999; Abrams et al, 1994; Campbell, Tessaro & DeVellis, 2002)**.** The outcome showed a sharp decline in nutrition activities at the end of the WWT (Patterson et al, 1998). Whether or not there was an intervention component, which may have delayed/prevented this, is not reported.

The cases reviewed here used a number of strategies/behaviour change techniques in their interventions to change behaviour. These varied from developing strategies based on needs assessment, which were explored through focus groups with employees (Health Works for Women) to asking employees which choice of behaviour that they wish to change, as this may enhance motivation to engage in change for multiple behaviours, dependant on their personal level of priority. These seemed to assist in understanding health beliefs, barriers and choice of lifestyle in a more detailed manner. Similar to the WWT, the Working Healthy Project also adopted the participatory model

to promote ownership, and thereby enhance possibility of sustaining changed behaviour. The project focused more intensively on physical activity, again drawing on interventions based on theoretical concepts. The results from the Working Healthy Project demonstrate the need for different strategies of behaviour change interventions i.e. influencing the environment and organisation, but furthermore, a variety of different strategies focusing solely on the employee can increase likelihood of sustainability. A number of these strategies based on theoretical concepts can be effectively implemented in practice (Campbell, Tessaro, DeVellis, 2002). However; there are some central issues which need to be addressed. Firstly, there is a need to understand the nature of behaviour at task. Different behaviours require major changes in one's personal life. Change in diet could mean adjusting your grocery list/changing your cooking habits. Whereas changing smoking behaviour is not change of behaviour alone, but change of identity and an addiction. The cases reviewed have defined the mode of deliver (One-to-One sessions/groups/lay peer advice/key participatory approach through social networks (engaging/social)/written/verbal etc.) in more detail than the content of intervention, whereas the content of the interventions needs further clarification. For example, as mentioned earlier, in the case of HRA/VHA, it is difficult to draw conclusions which behaviour techniques are used. Evidence continuously suggests that behaviour change interventions should be based on theory (Eccles Grimsaw & Walker et al, 2005; Green & Glasgow, 2006; Campbell, Tessaro & DeVellis, 2002). Even though a number of studies reported using theory to guide the development of interventions, it was not clear how these were adopted in practice, and which constructs of the theory was the key factor in change. This has also been identified previously in behaviour change literature (Michie & Prestwich, 2010). An appropriate application and reporting of relevant

theories is likely to assist in identifying causal mechanisms which play a key role in change, and eliminate those which do not as much (Michie, Fixsen & Grimshaw et al, 2009).

Recommendations for practice and research

There is a need for workplace health promotion research to focus on factors that are required for further supporting and enhancing possibility of sustaining long-term changes in health behaviour. This should be in line with a comprehensive theoretical framework focusing on the environmental influences on the individual and vice versa. Among cases which implemented strategies at several levels, follow-up results were similar to those at baseline (Working Well, Gomel et al, 1993). This highlights the difficulty in sustaining changed behaviour. Evaluation of worksite health promotion programmes is complicated by the fact that such programmes vary widely in objectives, content, duration, organisational culture and setting. Some are simple and inexpensive while others are comparatively more intensive.

Changing behaviour requires intense efforts that not only are appropriate to the context people are in their workplace, but also their readiness to change. In order to sustain that change, there is need for an in depth understanding of what drives people to (1) maintain their current behaviour (2) be motivated to change. There is also a need to explore the *extent* of intervention intensity; which is (1) appropriate within a workplace setting, enough to (2) effectively change multiple behaviours and (3) provide grounds for sustaining changed behaviours.

There is a need to explore the psychological processes of engaging in multiple behaviour change. By psychological processes it is meant (a) improved self-perceived

competency to sustain changed behaviour (2) Increased motivation and self-efficacy to change the following behaviour.

For scientific reporting purposes, there is a need for describing intervention content in a manner that relates them to their theoretical foundation (Michie, Rothman & Sheeran, 2007; Johnston & Dixon, 2008). Intervention content is to an extent responsible for effectiveness in work place health promotion (Rongen, Robroek & van Lenthe, 2013) Scientific evidence from psychological models, if presented in a concise and coherent way, may support organisations and workplaces to apply with relative ease. There is also a need to standardise methods on reporting results.

It makes sense to understand this within a framework which (1) captures the different layers of influence on behaviour e.g. Dahlgren & Whitehead (1991) (2) a model which clearly captures the mechanism between the internal as well as external factors (3) A systematic method which incorporates the nature of the behaviour. Furthermore, there is a need for a model which is coherent, concise, and transparent. Through the application of a model capturing the above, organisations and those responsible for developing interventions can describe and understand why interventions targeting to change several behaviours work or why they don't work. Furthermore, this allows for transparent content of intervention and reporting for each individual behaviour.

The BCW (Michie et al, 2011) seems like it captures these factors. It seems to be an appropriate framework, which is adaptable to factors such as resources, different employee groups and naturally takes account of the context. If this framework is adopted, intervention developers at the workplace will need to identify the behaviour

target, followed by identifying what needs to be changed to achieve that change in behaviour. This may allow for selective, theoretically driven intervention components, and reduce the likelihood of selection of intuitive or common sense intervention components for the different behaviours. The true barriers for programmes to support sustainability in change may not lie in the information dispersal, awareness and educational campaigns; but a lack of focus on key concepts which determine individual's complex riddle of cognitive rationalisation of engagement in their choice of lifestyle.

Conclusion

The literature reviewed varied in a number of ways. Some programmes focused on the entire workforce, some focused on those at high risk, and some addressed the social element, environmental or organisational change. Some programmes, implemented fewer strategies, whereas others implemented multiple interventions, using multiple strategies and focused on bringing individual and organisational change. These variations are results of organisational structures, workforce characteristics, context, culture and resources. This diversity makes it difficult to draw firm conclusions. However, the following was identified:

Programmes, which implement interventions to influence several levels at the workplaces, and are multi component, appear to be in a better position to support multiple behaviour change than those who only target one level.

Programmes, which use multiple strategies e.g. intensive one-to-one counselling, peer support, lay health promotion advice are more successful in supporting sustainability

than those who provide health risk assessments alone and a less comprehensive framework for health promotion.

Interventions identified as more comprehensive appear to be in a better position of supporting and achieving sustainable health behaviour change, directed their approaches on different levels. The approaches included change in environment and organisation, as well as approaches, which focused on the individual change. Although, the question remains – is it possible to replicate these interventions? It is high likely that this is not possible. This is primarily due to a vague definition of intervention content and description of implementation and lack coherency.

There is limited evidence whether or not workplace health promotion interventions support sustainable multiple behaviour changes. One reason is the severe difference in outcome measures making it almost impossible to compare effect over time and between different cases. In order to effectively support employees through sustainable multiple behaviour change, more comprehensive frameworks are required.

Table 3: Methodological Quality Assessment of cases

Case ID	Case Name	Selection bias	Study Design	Confounder	Blinding	Data collection	Withdrawal & drop outs	Overall quality assessment
7	**TAKE HEART**	Moderate	Strong	Strong	Weak	Strong	Strong	Weak
6	**WELL WORKS**	Weak	Strong	Strong	Weak	Moderate	Strong	Weak
6	**WELL WORKS II**	Weak	Strong	Strong	Weak	Weak	Strong	Weak
21	**Health Works for Women**	Weak	Strong	Strong	Weak	Moderate	moderate	Weak
9	**Working Well Trial**	Moderate	Strong	Strong	Weak	Moderate	Strong	Weak
29	**Working Healthy Project**	Moderate	Strong	Strong	Weak	Moderate	Strong	Weak
64	**Gomel et al 1993**	Strong	Strong	Strong	weak	Strong	Strong	Weak
70	**Prochaska et al 2008**	Moderate	Strong	Strong	Weak	Weak	moderate	Weak
13	**Bank of America**	Weak	Strong	Strong	Weak	Weak	moderate	Weak
25	**PERS**	Moderate	Strong	Strong	Weak	Weak	Strong	Weak
31	**Healthy Worker Project**	Weak	Strong	Strong	Weak	Moderate	Strong	Weak
33	**Gemson et al 1995**	Weak	Strong	Strong	Weak	Moderate	moderate	Weak
41	**Muto 2001**	Weak	strong	Strong	Weak	Strong	moderate	Weak

Figure 1. Flow diagram of literature search and study selection criteria

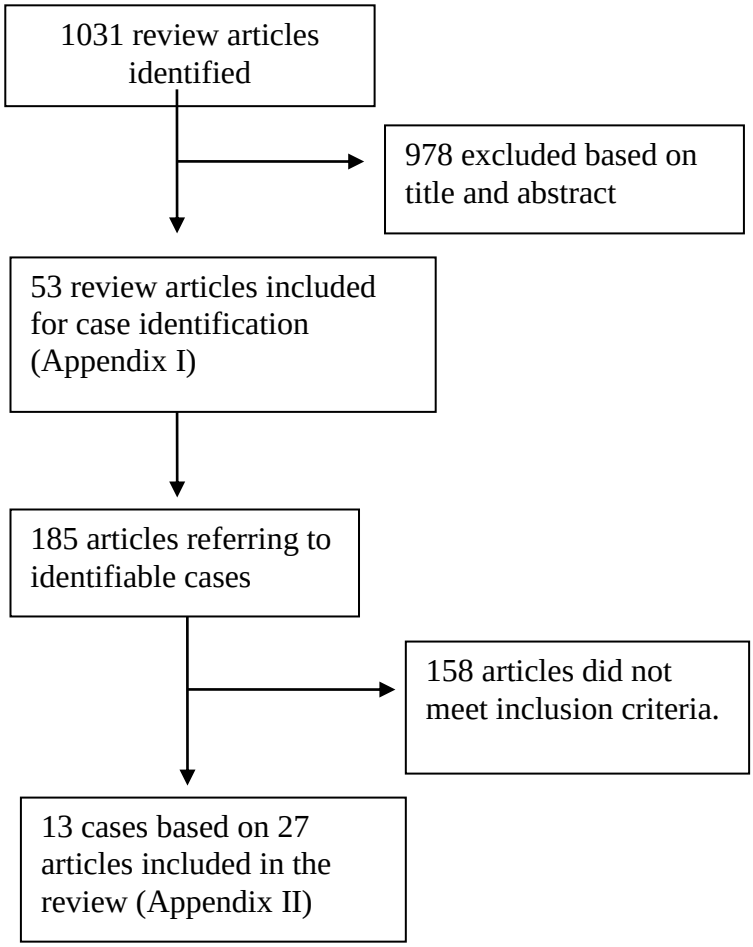

Figure 2: Intervention components in cases

Theoretical framework					x	x	x	x		x	x	x	x
Policy					x	x	x			x	x		
Environment					x	x	x			x	x		
Incentive		x				x		x					x
Lay/peer advice						x					x	x	
Employee Advisory					x	x	x			x	x	x	
Tailored					x	x	x	x		x	x	x	x
Engaging (social)						x	x				x		x
Group sessions		x			x	x			x	x	x	x	
one-one				x		x		x	x		x		
Asses & feedback	x		X		x	x	x	x		x	x	x	x
Verbal Information		x	X			x	x	x	x		x	x	x
Written Information	x	x	X	x	x	x	x	x	x	x	x	x	x
	1983	**1987**	**1988**	**1988**	**1989**	**1991**	**1993**	**1993**	**1996**	**1997**	**1999**	**2001**	**2008**
	PERS	**Healthy worker Project**	**Bank of America**	**Gemson et al 1995**	**WellWorks**	**Working Well Trial**	**Take Heart**	**Gomel et al 1993**	**Muto 2001**	**WellWorks II**	**Working Healthy Pro**	**Health Works for Women**	**Prochaska et al 2008**

Table 4 Reported outcomes

Reference	Length of intervention	BMI	Weight	% body fat	BP syst	BP dias	Cholesterol	HDL	dietary fats	Saturated fats	Triglycerides	Fruit	veg	Fibre	fat	Sodium	physical activity	aerobic capacity	smoking cessation	smoking quit attempts
Diet and smoking																				
Take Heart 1&2	24						ns	ns				Ns	ns		ns				ns	ns
Well Works II	24											Ns	ns							ns
Diet smoking and physical activity																				
Gomel et al 1993	12			ns			s											ns	ns	
Healthy Worker Project	24		s																ns	
Health Works for women	18											S	s		ns		ns		ns	
Working well	24											X	x	ns	x				ns	
Well Works	24											X	x	ns	x				ns	
Working Healthy project	30											X	x	x	ns		s		ns	ns
PERS	18	ns							s	s							s		s	
Bank of America	24				ns		ns		s							s	s		ns	

Prochaska et al 2008	6	ns														s		ns	
Physical activity and diet																			
Gemson et al 1995	6		ns		ns		ns									s			
Muto 2001	18	s	s		s	s	s	ns			s								

s – significant at the end of the intervention
ns- not significant

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Appendices

Appendix I

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Appendix II

List of studies included in the systematic review

Take Heart I & II (7)

Glasgow et al;1995 Take heart: results from the initial phase of a work-site wellness program *Am J Public Health*;85(2):209–16

Glasgow et al,1997 Take Heart II: replication of a worksite health promotion trial J Behav Med 1997;20(2):143–61

Glasgow et al (1994) Modifying dietary and tobacco use patterns in the worksite: The Take Heart project Health education Q 21:69-82

Terborg, Hibbard and Glasgow (1995) Behaviour change at the worksite: Does social support make a difference? Am J Pub Health 10(2):125-31

WellWorks I & II Study (6)

Sorensen et al (1998) The effects of health promotion-health protection intervention on behaviour change.the WellWorks study Am J public health 88;1685-1690

Sorensen 1996 Worker participation in an integrated health promotion/ health protection program: results from the WellWorks project. Health Educ Q 1996, 23(2):191-203.

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Sorensen G, 2003 A comprehensive worksite cancer prevention intervention: Behavior change results from a randomized controlled trial (United States J public health policy 24/1):5-25

Health Works for Women (21):

Campbell, 2002 Effects of a tailored health promotion program for female blue collar workers: health works for women Prev med 34:313-323 (17)

Working Well Trial (9)

Glanz K et al (1998) Impact of work site health promotion on stages of dietary change: The Working Well Trial Health Educ Behav 25:448-463

Sorensen G et al (1996) Work site-based cancer prevention: Primary results from the Working Well Trial Am J Public Health 86:939-947

Biener L (1999) Impact of theWorkingWell Trial on the worksite smoking and nutrition environment Health Educ Behav 26:478-494

Patterson RE et al (1998) Durability and diffusion of the nutrition intervention in the WorkingWell Trial. Prev Med 27:668-673

Emmons (1994) Mechanisms in multiple risk factor interventions: smoking, physical activity, and dietary fat intake among manufacturing workers Working Well Research Group; 1994:481–9.

Abrams et al (1994) Cancer control at the workplace: The working well trial Prev Med 23;1-13

Heimendinger et al (1995) The working well trial: Baseline dietary and smoking behaviours of employees and related worksite characteristics. Prev med 24:180-93

The Working Healthy project (29):

Emmons, 1999 The working healthy project: A worksite health-promotion trial targeting physical activity, diet and smoking J occ and env med 41(7):545-555

Gomel et al (64)

Gomel et al (1993) Worksite cardiovascular risk reduction: a randomised trial of health risk assessment, education, counselling and incentives Am J Public health :83(9):1231-8

Prochaska et al (70)

Prochaska (2008) Initial efficacy of MI, TTM tailoring and HRI's with multiple behaviours for employee health Prev med;46(3):226-31

Bank of America (13)

Fries JF et al (1993) Two year results of a randomised controlled trial health promotion program in a retiree population: the bank of America study Am. J. Med. 94:455–62

Leigh et al (1992) Randomized controlled study of a retiree health promotion program. The Bank of American Study Arch Intern. Med. 152:1201–6

PERS(25)

Fries JF et al (1994) Randomised control trial of cost reductions from a health education program: the California public employees Retirement System (PERS) study Am J Health Promot 1994:8(3):217-23

Healthy Worker Project (31):

Jefferey, 1993 The Healthy Worker Project: a work-site intervention for weight control and smoking cessation Am J Public Health 1993;83(3):395– 401.

Gemson et al (33);

Gemson and Sloan (1995) Effect of computerised health risk appraisal as part of a periodic health exam at the worksite Am J Health Promotion 1995:9:462-6

Muto (41):

Muto T Yamauchi (2001) Evaluation of a multicomponent workplace health promotion program conducted in Japan for improving employees' cardiovascular disease risk factors Prev Med. 2001;33(6):571–7.

13 cases based on 27 papers

Appendix III

Table 2 – Summary of included studies in the review

Case name (programme name) & Period/Location	Case Summary	Additional comments:
7. TAKE HEART I 1991- 1993 USA	Focus: Tobacco and diet The TAKE heart Project (RCT) compared 13 early Intervention worksites to 13 matched Delayed Intervention worksites after 1 and 2 years of intervention. Take Heart Program - • Assessment and feedback of employee health habits, job characteristics, cholesterol assessment and diet history at baseline and 2 years. • Workplace Steering Committees (WSC) formed • WSCs provided assistance from research team and written guidelines. • WSCs met monthly to select and promote activities and events and lobby for health promotion policies • Interventions focused on employees included activities in tobacco and food choices. These were based on motivational/ incentive, educational/ skills and maintenance activities.	Prior to this study, worksites had conducted a number of health promotion activities. About 80% had a no smoking policy and one half had offered stop smoking programmes and over two third had cholesterol assessments. Very diverse sample of worksite Results: Difference between Take Heart Program and Delayed Intervention at 2-years was found to be non- significant in smoking prevalence, smokeless tobacco use, smoking, daily fat intake, smoking quit attempts, total cholesterol, % participants with total cholesterol >200, % calories from fat, extent tried limit food high in fat and total cholesterol were not significant High rate of smoking cessation was observed for both conditions among both cohort 26% quitting over 2 years. Comments:

…… TAKE HEART II (The DIG from TH1 & newly recruited matched worksites) 1993-1995 USA	• WSCs were expected to choose at least 16 activities out of a total of 38 options. • Environmental changes including tobacco-use policies and low fat items in cafeterias and vending machines initiated • Activities were coordinated with community and national events to wide spread the promotional efforts and enhance participation. Delayed Intervention Group • Assessments and feedback of employee health habits, job characteristics, cholesterol assessment and diet at baseline and 2 years …….. The TAKE HEART II project included the Take Heart I Programme + greater direction and support to steering committees and a programme to promote physical activity. Intervention features were the same, but updated menu guidelines were provided. Measures were same as TAKE HEART I but HDL cholesterol was also added. Theoretical framework: Trans theoretical Model	Low cost, low intensity program. There was considerable Variability across worksites within all diseases. For example, Smoking cessation rates varied between 17% to 65%. Authors recommended that interventions be tailored to the worksite. Although Workplace Steering Committee activities were fully supported by the employer there were large differences in their levels of activity …….. Comments: The Take Heart II Workplace Steering Committees were offered greater support than the Take Heart 1 Workplace Steering Committees Strongest results in dietary outcomes.

Case name (programme name) & Period/Location	Case summary	Additional notes
WORKING WELL TRIAL 1991- 1993 USA	5 year cancer control trial Work sites (n=114) in 16 states in USA (manufacturing, communication, public service and utilities.) Population ranged in size from 32 to 1,790 workers. Worksite health promotion (WWT) core intervention: • EAB formed to incorporate employee input + a worksite coordinators appointed so all relevant groups at workplace are heard. Organization level/environmental level • consultation on same environmental level as in Well Works Individual level • Promotional activities consisting of kick-off event, interactive activities, self-assessment, information, self-help and educational materials, campaigns. 3 of 4 study centres provided an optional minimal intervention consisting of printed materials and/or self-help programs Theoretical Framework: Individual Level: social cognitive, social network and social support theories, theories of motivation,	All centres targeted eating patterns, three targeted smoking and each chose one additional risk factor (cancer screening, occupational exposure to carcinogens exercise or smokeless tobacco. Outcome/Results: Difference between WWT and Control after completion of intervention (1991- 1993) Individual level p=0.033 % energy from fat consumption p=0.0001 increased fruit & vegetables consumption Not significant change in tobacco Use 2-years after completion of WWT intervention (1991-1995) WWT to control Not significant nutrition. Comments: Authors report case as largest published, English language trial on cancer control/nutrition and Smoking interventions in the workplace. Broad range of work sites. The intervention consisted of

	Organizational Level: Diffusion of innovation, mass communication, social marketing.	environmental and programs targeting individual behaviour. Healthy diets were more successful in interactive activities that last for longer periods of time such as classes compared to one-time activities such as kick-off events or handing out print information. The intervention implemented became an integral part of the worksite and was possibly the strongest predictor of the nutrition activities score at 2-years follow-up ($p<0.0001$)which shows that embedding health promotion programmes into pre-existing organisational structures may prove more successful than creating new groups and enhance sustainability

Case name (programme name) & Period/Location	Case summary	Additional notes
Health Works for Women 2002 (publication year) USA	Female employees in manufacturing worksites. (9 worksites, 4 in intervention group) Five year (RT) programme: Targeted behaviours included physical inactivity, unhealthy diet, smoking and breast and cervical cancer screening. Intervention consisted of 2 strategies: Intervention	Smoking cessation offered but declined at all worksites Women may not choose quitting smoking as a priority and preferred to focus on making changes in dietary behaviour and exercise. All women received a small incentive of some sort Exercise increased from 61% (at baseline) to 68% (18 month follow up)

	- Individualised computer tailored "women's magazines providing personalized feedback, strategies for change and other information - Natural (lay) helpers programme (elected from each workplace (trained & educated) to organize activities, diffuse information and support Intervention designed to occur outside of work hours Theoretical frameworks: Social Cognitive Theory, Transtheoretical model	Over the course of 18 months women in the intervention group increased their fruit and vegetable intake a total of 0.7 servings compared to no change in delayed. Increase was significant. Authors indicate the likelihood of the lay helper component being responsible for the behaviour change alone. Data solely collected through self-reports.

Case name (programme name) & Period/Location	Case summary	Additional notes
California Public Employees Retirement System (PERS) 1983 (publication year) USA	12 month RCT (n=21 170) The intervention included: - Health risk assessment (administered every 6/12 month) - Computer generated, individualised reports and recommendation letters, self-management materials and a health promotion book- 'Take care of yourself' (for those under 65 years of age), and 'Aging Well' (for those above 65) and other educational materials were sent to out every 6 months	Based on the Healthtrac/Senior HealthTrac programme same as Bank of America study.

Case name (programme name) & Period/Location	Case summary	Additional notes
The Working Healthy Project 1999 -2003 (pub year) (2 ½ years)	Working Well Trial + physical activity Manufacturing worksites (n=26) in intervention in 1 of the 4 centres of the Working Well Trial. Programme (RCT) targeted smoking, nutrition, and physical activity. Cohort of 2055. Programme consisted of: Working Well Trial intervention + - Assessment of physical activity options, presentation and development of methods to support physical activity- discussion with EABS - Previous interventions expanded to include physical activity in other activities, education and materials to support physical activity. 'Standard minimal standard care was offered in control – companies offered self-help programs. Theoretical framework: Same as Working Well Trial	Strategies implemented to change social norms and health related policies. Interventions were aimed at both the individual employee and environmental/organisational levels of change (assessment of current physical activity options for employees (space, showers, equipment, discounts on membership, etc.) Physical Activity: Motivation to progress to the next level of change in TTM varied for different behaviour i.e. same intervention are less likely to work for every kind of behaviour! % of participants reduced on level of motivation for physical activity until the preparation stage, after which % participants steeply increased Diet: For fat and fibre intake the % of participant's motivation reduced from approx. 75% to approx. 20% in the intervention condition from pre- to action. A moderate change occurred at contemplation towards preparation in fat intake but reduced steeply towards action. Smoking: Reduction on % of participants progressing on motivation from the contemplation to the prep stage, remaining

		stages showed an increase in % of participants progressing in motivation.

Case name (programme name) & Period/Location	Case summary	Additional notes
Healthy Worker Project (HWP) 1987-1990	Worksites (n=32) employing between 400-900 employees, RCT. Programme consisted of: - 11 bi weekly behaviour change classes led by trained health educators. - Classes (4 x 2 years) for smoking cessation and weight loss - Money deducted from employee pay, which was reimbursed when behavioural goal was met (as incentive) - Incentive funds not returned were given to charity. Control- No intervention	Weight loss goals were set by participants themselves. 43% of smokers quit (Co2 < 8ppm) Programme reached 12% smokers and 36% obese in the 2 years. Net reduction of 2% in cohort prevalence translates into 127 quitters! Results: Mean (SD) change smoking prevalence -3.04(2.67) Mean (SD) change BMI -0.02(0.19)

Case name (programme name) & Period/Location	Case summary	Additional notes
Gemson et al	Large financial services firm in New York, RCT, n =	No statistically significant differences in changes in

1988- 1991 USA	161 Programme consisted of: Intervention group (HRA group) – they received a written report (informed of health age) with counselling Control: Completed HRA questionnaire, but received no report nor counselling. Both groups underwent a periodic health examination and were counselled by a physician about the results. * Employees who volunteered for a periodic health evaluation programme were randomly assigned to either the intervention or control group.	cholesterol, weight, or systolic blood pressure. Participants in intervention (self) reported increase in physical activity $p<0.05$. However the risk was reduced for all in intervention group. Those categorised as having a high health age in the HRA showed greater improvements in cholesterol, physical activity, blood pressure and weight than those categorised at 'low age' – Consistent with the Health belief Model- perceived severity to poor outcome which can enhance motivation to change behaviour. Time spent in counselling not reported.

Case name (programme name) & Period/Location	Case Summary	Additional comments:
Muto et al 1996-1998 JAPAN	Health promotion consisted of 2 parts: a) Main programme (provided over 4 days 'Monday'-'Friday') b) Follow up programme (every 3 months over 1 year) a) Multi components: education on nutrition, physical activity, and stress, cardiovascular	Attendance in programme was considered working hours. Instructors in the programme were amongst others physician, dietician, an exercise trainer and programme coordinators 18 months after baseline changes were significantly greater in the intervention group than the control group regarding body weight, BMI, SBP, total cholesterol, except for DBP and blood glucose ($P< 0.001$ to $P = 0.030$)

	disease risk factors through lectures, practical training, individual counselling, group discussion and self-education. Each of these ranged from 60 – 180 minutes in duration for each session. At the end, participants required to define his goals. b) Follow up consisted of self-evaluation of goals (conducted every 3 months for 1 year). Comments and goals were given. Blood chemistry taken at the same time, results explained through postal mail. Employees attended one of the six intervention sessions conducted twice a year over the 3 year period	Family member was engaged at the follow up period; however the effectiveness of doing this has not been evaluated.

Case name (programme name) & Period/Location	Case summary	Additional notes
Gomel et al 1993-1994 Australia	RCT, 28 (n) worksites – 4 intervention conditions Programme was implemented at different levels of intensity Programme consisted of: Condition 1 (HRA): HRA + feedback provided to risk factor through standardised procedures. Those at elevated risks were referred to their family physician. (30 minutes)	Results: BMI (kg/m2): BMI increased significantly in the four conditions, the increase was significantly greater than for the average of the health risk assessment and risk factor education group than the 2 behavioural counselling sessions. % of Body fat: Steep decrease in body fat in counselling conditions (3-6 months), some decrease in the RFE group up to 6 months. Overall no significant changes in % of body fat

	Condition 2 (Risk factor education): Received same as HRA plus standardised *general* advice in lifestyle changes required to reduce risk factor. Educational resource manual, video tapes (how to strategies) (50 minutes) Condition 3 (Behavioural counselling): Received same as 'risk factor education' *plus* 6 counselling sessions over a 10 week period offered if risk factor identified. Self-instructional manual guide was also provided. Regular assessment and feedback was also provided during sessions. Average duration: 2 hours, 20 mins counselling (3 sessions) from a psychologist during the 10 week programme in addition to the HRA. Behavioural counselling plus incentives: received same as 'risk factor education *plus* lifestyle change manual and were offered a goal setting and follow up counselling session and incentives (at 3 month, 6 month risk factor reduction). Each week lottery tickets were issued to participants reporting that they had made changes from a list. Final incentive was $1000 prize for the site that achieved that largest % of participants reaching their 6 month goal. (2 hours of counselling + 30 min HRA) Workplace steering committee with reps drawn from different departments to oversee implementation.	from baseline to 12 months. Significant decrease in body fat, followed by return to baseline levels in the behavioural counselling conditions. Mean cholesterol changes: Over all group, no significant changes in mean cholesterol over the 12 month period, and no significant differences between the groups. Mean BP changes: Significant short term decrease in BP followed by increase for the counselling plus incentives group compared with the behavioural counselling group. Overall significant decline in mean BP from baseline to 12 month for those in behavioural counselling group compared with those in beh. Coun. Plus incentives group. Aerobic capacity: Overall average, there was a significant increase in aerobic capacity across all groups, followed by return to baseline. There were no significant differences in aerobic capacity between groups over 12 months. Smoking: Significantly higher percentage of individuals in the pooled behavioural counselling and behavioural counselling plus incentives groups (18%) than in the pooled health risk assessment and risk factor education (3%) had quit smoking at 3 months, but not at 6-12 months. Sustained cessation rates from baseline, to 6- and 12 month rates were significantly higher for the two behave conditions than for the HRA and RFE group. Physical and biochemical measures were obtained to validate

	Theoretical Framework: Counselling and manual were based on Transtheoretical Framework	self-reported lifestyle changes.

Case name (programme name) & Period/Location	Case summary	Additional notes
Prochaska et al 2008 (publication year)	Medical University, n= 1400, RCT (6 months) Aim was to compare the initial efficacy of Motivational Interviewing, Online Transtheoretical Model (TTM) tailored communications, and brief Health Risk Intervention (HRI) on four health risk factors, inactivity BMI, stress, and smoking. Initial email inviting to join. All participants in HRI session Participants were randomised into 3 groups: Group 1:HRI Group 2: HRI + MI (in person/telephone over 6 months) Group 3: HRI+ TTM (online) Interventions: Group 1: HRI combines health risk assessment (providing feedback on the stage of change participant	Eligible participants were at risk for at least one risk behaviour. Overall across all groups at baseline, 71.1% were sedentary, 67.1% overweight or obese, 35.6% reported not managing stress effectively and 9.7% were current smokers. Results: No significant difference between the group 2 and group 3 for stress and exercise. HRI group had a significantly greater mean number of risks than that the MI and the TTM groups at 6 months.

	was at) and one step participant could take to begin progress on change. Group 2: In addition to what was provided in group 1, group 2 received MI coaching (client centred techniques). Initial session was 30-45 min, and 2 follow up sessions lasted 10 -15 minutes Group 3: In addition to what was provided in group 1, group 3 received assessment and tailored feedback on the different constructs relevant for participant's stage of change online. Interaction online for four intervention programmes (stress, exercise, smoking and weight management). Three feedback sessions for each risk, future sessions can only occur after 30 days, but they could access as many as they wanted overall. Theoretical Framework: Motivational Interviewing, Transtheoretical Model	

Case name (programme name) & Period/Location	Case summary	Additional notes
Bank of	Bank of America Retiree health promotion programme	Low cost possibly effective as this group is retirees, have more

America Study (Senior Healthtrac Programme) 1988-1989 USA	(Senior Healthtrac programme. 12 month RCT n=919 (grouped into 3) 1. Full program 2.Questionnaire only 3. Insurance claims. The intervention (1.full programme) included: Health habit questionnaire (administered every 6 month) + HRA, personal recommendation letter (signed by physician and recommendation on how to change behaviour), self-management materials and a health promotion book. A book 'take care of yourself as distributed in the 1st month and a set of nutrition tips was provided at 6 months- Quarterly newsletters were sent.	time to focus and read in spare time, and set goals for themselves. Only intervention group received the personal letter and report detailing their success and directing them to habits that needed the most attention. Programme delivered entirely through mail. Dietary habits: High salt intake (%) reduced by (-52)% from baseline at 24 months High dietary fat (%) was reduced by (-43) from baseline at 24 months.

Case name (programme name) & Period/Location	Case Summary	Additional comments:
6. WellWorks Study 1989-1991 USA	Focus: Nutrition and smoking WellWorks Study (RCT) – changing dietary habits & smoking Assessed effectiveness of a model which integrated both health promotion and health protection.	Survey results from 1989 -1994 Primary outcome for smoking was 6 month abstinence. Change in smoking cessation compared to control was not significant Integrating an occupational health component was related to increased participation in smoking control activities. Six

	Primary focus on blue collar workers. Based on the Social- ecological model of health promotion. 3 key elements targeting behaviour change: • Joint worker engagement participation in planning & implementation (Employee Advisory Boards - EAB) • Assessment and consultation on environmental changes of occupational exposures and recommendations to EAB on reducing occupational exposures on an organization level (tobacco control policies, increased availability of health foods at workplace, reduction in exposure to environmental hazards. • Tailored activities and education material to reduce occupational	month abstinence rates were 15% in intervention. Analysis based on self-reported data to assess change.
…….. WellWorks II Study 1997-1999 USA	Exposure on an individual level e.g. tailored (diet/smoking sessions, skill building, promotional activities, displays etc. Employee baseline survey results for distribution and 3 of 4 study centres provided an optional minimal intervention consisting of printed materials and/or self-help programs. …… Focus: Nutrition and smoking 15 manufacturing worksites randomly allocated to either the HP or HP+ OHS intervention. HP/OHS (seven worksites): Worksite health promotion with an occupational health and safety intervention focusing on the worksite, environment and individual • EABs consulted to management on tobacco control	…… …….. A small difference at P<0.05 level was found smoking quit rate (Only blue-collar (hourly workers)) between the HP/OHS and HP after 2 years. However, smoking prevalence, overall smoking quit rate, fruit and vegetable servings were all non-significant For all smokers, quit rate higher in HP/OHS condition compared to the HP group. Diff not stat sig. Quit rates assessed by self-reported abstinence for the 6 months prior to survey. Overall adjusted mean at final in fruit and veg was 3.37 with a mean change of - 0.10 from baseline.

	policies, food catering and catering policies and reduce exposure to hazardous substances inherent in the work processes • one-to-one counselling and technical assistance, group educational sessions offered as well as written materials • Individual interventions focused on changing nutrition, tobacco use and occupational health and safety (environment) Worksite health promotion (HP) intervention (eight worksites) • EABs consulted to management on same issues as in HP/OHS group • Individual interventions focused on nutrition and tobacco Theoretical frameworks: Organisational focused intervention: Participatory model based on the principles of community organization and the socio-ecological model of health promotion. Individual focused intervention: Based on behaviour change theories.	

Appendix IV

Methodological Assessment tool

QUALITY ASSESSMENT TOOL FOR QUANTITATIVE STUDIES

COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?

1. Very likely
2. Somewhat likely
3. Not likely
4. Can't tell

(Q2) What percentage of selected individuals agreed to participate?

1. 80 - 100% agreement
2. 60 – 79% agreement
3. less than 60% agreement
4. Not applicable
5. Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

B) STUDY DESIGN

Indicate the study design

1. Randomized controlled trial
2. Controlled clinical trial

3. Cohort analytic (two group pre + post)

4. Case-control

5. Cohort (one group pre + post (before and after))

6. Interrupted time series

7. Other specify _____

8. Can't tell

Was the study described as randomized? If NO, go to Component C.

No Yes

If Yes, was the method of randomization described? (See dictionary)

No Yes

If Yes, was the method appropriate? (See dictionary)

No Yes

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

C) CONFOUNDERS

(Q1) Were there important differences between groups prior to the intervention?

1. Yes

2. No

3. Can't tell

The following are examples of confounders:

1. Race

2. Sex

3. Marital status/family

4. Age

5. SES (income or class)

6. Education
7. Health status
8. Pre-intervention score on outcome measure

(Q2) If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)?

1. 80 – 100% (most)
2. 60 – 79% (some)
3. Less than 60% (few or none)
4. Can't Tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

D) BLINDING

(Q1) Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?

1. Yes
2. No
3. Can't tell

(Q2) Were the study participants aware of the research question?

1. Yes
2. No
3. Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

E) DATA COLLECTION METHODS

(Q1) Were data collection tools shown to be valid?

1. Yes
2. No
3. Can't tell

(Q2) Were data collection tools shown to be reliable?

1. Yes
2. No
3. Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

F) WITHDRAWALS AND DROP-OUTS

(Q1) Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?

1. Yes
2. No
3. Can't tell
4. Not Applicable (i.e. one time surveys or interviews)

(Q2) Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).

1. 80 -100%
2. 60 - 79%
3. less than 60%
4. Can't tell
5. Not Applicable (i.e. Retrospective case-control)

RATE THIS SECTION	STRONG	MODERATE	WEAK	
See dictionary	1	2	3	Not Applicable

G) INTERVENTION INTEGRITY

(Q1) What percentage of participants received the allocated intervention or exposure of interest?

1. 80 -100%
2. 60 - 79%
3. less than 60%
4. Can't tell

(Q2) Was the consistency of the intervention measured?

1. Yes
2. No
3. Can't tell

(Q3) Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?

4. Yes
5. No
6. Can't tell

H) ANALYSES

(Q1) Indicate the unit of allocation (circle one)

community organization/institution practice/office individual

(Q2) Indicate the unit of analysis (circle one)

community organization/institution practice/office individual

(Q3) Are the statistical methods appropriate for the study design?

1. Yes
2. No
3. Can't tell

(Q4) Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?

1. Yes
2. No
3. Can't tell

GLOBAL RATING

COMPONENT RATINGS

Please transcribe the information from the grey boxes on pages 1-4 onto this page. See dictionary on how to rate this section.

A	**SELECTION BIAS**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	
B	**STUDY DESIGN**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	
C	**CONFOUNDERS**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	
D	**BLINDING**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	
E	**DATA COLLECTION METHODS**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	
F	**WITHDRAWALS & DROPOUTS**	**STRONG**	**MODERATE**	**WEAK**	
		1	2	3	Not Applicable

GLOBAL RATING FOR THIS PAPER (circle one):

1	STRONG	(no WEAK ratings)
2	MODERATE	(one WEAK rating)
3	WEAK	(two or more WEAK ratings)

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (A-F) ratings?

No Yes

If yes, indicate the reason for the discrepancy

1. Oversight
2. Differences in interpretation of criteria
3. Differences in interpretation of study

Final decision of both reviewers (circle one):

1 STRONG

2 MODERATE

3 WEAK

Quality Assessment Tool for Quantitative Studies Dictionary

The purpose of this dictionary is to describe items in the tool thereby assisting raters to score study quality. Due to under-reporting or lack of clarity in the primary study, raters will need to make judgements about the extent that bias may be present. When making judgements about each component, raters should form their opinion based upon information contained in the study rather than making inferences about what the authors intended.

A) SELECTION BIAS

(Q1) Participants are more likely to be representative of the target population if they are randomly selected from a comprehensive list of individuals in the target population (score very likely). They may not be representative if they are referred from a source (e.g. clinic) in a systematic manner (score somewhat likely) or self-referred (score not likely).

(Q2) Refers to the % of subjects in the control and intervention groups that agreed to participate in the study before they were assigned to intervention or control groups.

B) STUDY DESIGN

In this section, raters assess the likelihood of bias due to the allocation process in an experimental study. For observational studies, raters assess the extent that assessments of exposure and outcome are likely to be independent. Generally, the type of design is a good indicator of the extent of bias. In stronger designs, an equivalent control group is present and the allocation process is such that the investigators are unable to predict the sequence.

Randomized Controlled Trial (RCT)

An experimental design where investigators randomly allocate eligible people to an intervention or control group. A rater should describe a study as an RCT if the randomization sequence allows each study participant to have the same chance of receiving each intervention and the investigators could not predict which intervention was next. If the investigators do not describe the allocation process and only use the words ‘random’ or ‘randomly’, the study is described as a controlled clinical trial.

See below for more details.

Was the study described as randomized?

Score YES, if the authors used words such as random allocation, randomly assigned, and random assignment.

Score NO, if no mention of randomization is made.

Was the method of randomization described?

Score YES, if the authors describe any method used to generate a random allocation sequence.

Score NO, if the authors do not describe the allocation method or describe methods of allocation such as alternation, case record numbers, dates of birth,

day of the week, and any allocation procedure that is entirely transparent before assignment, such as an open list of random numbers of assignments.
If NO is scored, then the study is a controlled clinical trial.

Was the method appropriate?

Score YES, if the randomization sequence allowed each study participant to have the same chance of receiving each intervention and the investigators could not predict which intervention was next. Examples of appropriate approaches include assignment of subjects by a central office unaware of subject characteristics, or sequentially numbered, sealed, opaque envelopes.

Score NO, if the randomization sequence is open to the individuals responsible for recruiting and allocating participants or providing the intervention, since those individuals can influence the allocation process, either knowingly or unknowingly.

If NO is scored, then the study is a controlled clinical trial.

Controlled Clinical Trial (CCT)

An experimental study design where the method of allocating study subjects to intervention or control groups is open to individuals responsible for recruiting subjects or providing the intervention. The method of allocation is transparent before assignment, e.g. an open list of random numbers or allocation by date of birth, etc.

Cohort analytic (two group pre and post)

An observational study design where groups are assembled according to whether or not exposure to the intervention has occurred. Exposure to the intervention is not under the control of the investigators. Study groups might be non-equivalent or not comparable on some feature that affects outcome.

Case control study

A retrospective study design where the investigators gather ‘cases’ of people who already have the outcome of interest and ‘controls’ that do not. Both groups are then questioned or their records examined about whether they received the intervention exposure of interest.

Cohort (one group pre + post (before and after)

The same group is pretested, given an intervention, and tested immediately after the intervention. The intervention group, by means of the pre-test, act as their own control group.

Interrupted time series

A time series consists of multiple observations over time. Observations can be on the same units (e.g. individuals over time) or on different but similar units (e.g. student achievement scores for particular grade and school). Interrupted time series analysis requires knowing the specific point in the series when an intervention occurred.

C) CONFOUNDERS

By definition, a confounder is a variable that is associated with the intervention or exposure and causally related to the outcome of interest. Even in a robust study design, groups may not be balanced with respect to important variables prior to the intervention. The authors should indicate if confounders were controlled in the design (by stratification or matching) or in the analysis. If the allocation to intervention and control groups is randomized, the authors must report that the groups were balanced at baseline with respect to confounders (either in the text or a table).

D) BLINDING

(Q1) Assessors should be described as blinded to which participants were in the control and intervention groups. The purpose of blinding the outcome assessors (who might also be the care providers) is to protect against detection bias.
(Q2) Study participants should not be aware of (i.e. blinded to) the research question. The purpose of blinding the participants is to protect against reporting bias.

E) DATA COLLECTION METHODS

Tools for primary outcome measures must be described as reliable and valid. If 'face' validity or 'content' validity has been demonstrated, this is acceptable. Some sources from which data may be collected are described below:

Self-reported data includes data that is collected from participants in the study (e.g. completing a questionnaire, survey, answering questions during an interview, etc.).

Assessment/Screening includes objective data that is retrieved by the researchers. (e.g. observations by investigators).

Medical Records/Vital Statistics refers to the types of formal records used for the extraction of the data.

Reliability and validity can be reported in the study or in a separate study. For example, some standard assessment tools have known reliability and validity.

WITHDRAWALS AND DROP-OUTS

Score **YES** if the authors describe BOTH the numbers and reasons for withdrawals and drop-outs.

Score **NO** if either the numbers or reasons for withdrawals and drop-outs are not reported.

The percentage of participants completing the study refers to the % of subjects remaining in the study at the final data collection period in all groups (i.e. control and intervention groups).

INTERVENTION INTEGRITY

The number of participants receiving the intended intervention should be noted (consider both frequency and intensity). For example, the authors may have reported

that at least 80 percent of the participants received the complete intervention. The authors should describe a method of measuring if the intervention was provided to all participants the same way. As well, the authors should indicate if subjects received an unintended intervention that may have influenced the outcomes. For example, co-intervention occurs when the study group receives an additional intervention (other than that intended). In this case, it is possible that the effect of the intervention may be over-estimated. Contamination refers to situations where the control group accidentally receives the study intervention. This could result in an under-estimation of the impact of the intervention.

ANALYSIS APPROPRIATE TO QUESTION

Was the quantitative analysis appropriate to the research question being asked?
An intention-to-treat analysis is one in which all the participants in a trial are analyzed according to the intervention to which they were allocated, whether they received it or not. Intention-to-treat analyses are favoured in assessments of effectiveness as they mirror the noncompliance and treatment changes that are likely to occur when the intervention is used in practice, and because of the risk of attrition bias when participants are excluded from the analysis.

Component Ratings of Study:

For each of the six components A – F, use the following descriptions as a roadmap.

A) SELECTION BIAS

Strong: The selected individuals are very likely to be representative of the target population (Q1 is 1) **and** there is greater than 80% participation (Q2 is 1).

Moderate: The selected individuals are at least somewhat likely to be representative of the target population (Q1 is 1 or 2); **and** there is 60 - 79% participation (Q2 is 2). 'Moderate' may also be assigned if Q1 is 1 or 2 and Q2 is 5 (can't tell).

Weak: The selected individuals are not likely to be representative of the target population (Q1 is 3); **or** there is less than 60% participation (Q2 is 3) **or** selection is not described (Q1 is 4); and the level of participation is not described (Q2 is 5).

B) DESIGN

Strong: will be assigned to those articles that described RCTs and CCTs.

Moderate: will be assigned to those that described a cohort analytic study, a case control study, a cohort design, or an interrupted time series.

Weak: will be assigned to those that used any other method or did not state the method used.

C) CONFOUNDERS

Strong: will be assigned to those articles that controlled for at least 80% of relevant confounders (Q1 is 2); **or** (Q2 is 1).

Moderate: will be given to those studies that controlled for 60 – 79% of relevant confounders (Q1 is 1) **and** (Q2 is 2).

Weak: will be assigned when less than 60% of relevant confounders were controlled (Q1 is 1) **and** (Q2 is 3) **or** control of confounders was not described (Q1 is 3) **and** (Q2 is 4).

D) BLINDING

Strong: The outcome assessor is not aware of the intervention status of participants (Q1 is 2); **and t**he study participants are not aware of the research question (Q2 is 2).

Moderate: The outcome assessor is not aware of the intervention status of participants (Q1 is 2); **or** the study participants are not aware of the research question (Q2 is 2); **or b**linding is not described (Q1 is 3 and Q2 is 3).

Weak: The outcome assessor is aware of the intervention status of participants (Q1 is 1); **and** the study participants are aware of the research question (Q2 is 1).

E) DATA COLLECTION METHODS

Strong: The data collection tools have been shown to be valid (Q1 is 1); **and** the data collection tools have been shown to be reliable (Q2 is 1).

Moderate: The data collection tools have been shown to be valid (Q1 is 1); **and** the data collection tools have not been shown to be reliable (Q2 is 2) **or** reliability is not described (Q2 is 3).

Weak: The data collection tools have not been shown to be valid (Q1 is 2) **or** both reliability and validity are not described (Q1 is 3 and Q2 is 3).

F) WITHDRAWALS AND DROP-OUTS - a rating of:

Strong: will be assigned when the follow-up rate is 80% or greater (Q2 is 1).

Moderate: will be assigned when the follow-up rate is 60 – 79% (Q2 is 2) **OR** Q2 is 5 (N/A).

Weak: will be assigned when a follow-up rate is less than 60% (Q2 is 3) or if the withdrawals and drop-outs were not described (Q2 is 4).